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Pages 9-16

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Senate Kills '58 Cotton Acreage Expansion Hope

Refusal to Suspend Senate Rule Stops Ellender Proposal

By JOHN CIPPERLY
Croplife Washington Correspondent

WASHINGTON—An effort by the cotton producers to obtain an expansion of acreage allotments for the 1958 crop failed in the Senate last week when that chamber turned down a proposal to get a 30% increase in cotton acreage for the 1958-59 crops.

Actually, the acreage increase proposal came close to a Senate vote. The acreage expansion proposal was in the form of a proposed amendment to the supplementary appropriation bill which made available $250 million additional for soil bank payments to remove cotton and corn acreage from production in the 1958 crops.

It was first necessary to obtain a suspension of the Senate rule to take up the acreage allotment increase amendment which was sponsored by Sen. Allen J. Ellender (D., La.). The Senate refused to suspend its rules on this point with the result that the Ellender bill never got to the floor for debate. However it seems unlikely that even so, it would have been defeated, since the cotton bloc itself was badly split on the issue of suspending Senate rules and the seeming contradiction in the amendment. The money bill itself raised serious objections from members of the Senate entering the debate.

It appears that there is little chance of any legislation this year to increase 1958 cotton acreage which is held now under the farm law of 1949 at approximately 17 million acres, of which about 5.1 million are expected to be removed from cotton cultivation through the use of the soil bank acreage reserve program contracts. Congress has allotted nearly $300 million to finance such soil bank operations for cotton.

Korean Urea Plant Expected to Begin Construction in May

NAJU, SOUTH KOREA—The South Korean government expects to begin construction sometime in May, on a $23.5 million urea plant here, according to announcements made by the department of commerce. Naju is in Cholla Namdo Province of South Korea.

The plant, expected to be in full operation in March, 1961, will have an annual capacity of 85,000 metric tons of urea. Five West German firms are under contract to the South Korean government to build the plant, most of the output of which will be used for fertilizer.

Several months of trial runs after completion of construction will precede turning over of the plant to the Korean government, it is indicated.

Another urea fertilizer plant of similar capacity is presently under construction at Chunju under provisions of the U.S. aid program, making the one at Naju the second large plant on the Korean peninsula. Construction of a $30 million fertilizer plant using funds from the Development Loan Fund of the United States is also said to be under consideration at the present time.

Aerial Applicators Chart New Agricultural Aviation Markets at Ohio Meeting

COLUMBUS, OHIO—About 60 aerial applicators, equipment and material suppliers, research men and educators took a look at the 1958 agricultural aviation picture here recently.

The group, attending the Ohio-Indiana Agricultural Aviation Conference at Ohio State University, heard reports on insect control, residue problems, crop and forest fertilization and seeding, and what's new in equipment. In general, the speakers indicated that the use of the airplane in agriculture will increase.

The U.S. Department of Agriculture will continue letting contracts for aerial applications to control insects, according to Arthur Gieser, in charge of the aircraft section for the Plant Pest Control Division, Agricultural Research Service, Beltsville, Md.

Among the programs mentioned were grasshopper control in the West and Midwest; Japanese beetle control in several midwestern states; fire ant control in Arkansas, Georgia, Alabama, Louisiana and Texas; cricket and spruce bud worm control in several western states and tent caterpillar control in a number of states.

Although in 1957 more than 6 million acres were sprayed with DDT and fuel oil for gypsy moth control in the Northeast, plans for 1958 are still indefinite, Mr. Gieser stated. Soon to start is a screw worm eradication control program in Florida in which boxes of certain sterile insects will be dropped from planes at 1,000 feet. The program will continue until eradication is complete, perhaps two years.

Opening a panel discussion on insecticides and residues, Dr. J. V. Osmun, Purdue University entomologist, noted "this is the most fluid condition in entomology. Changes are being made swiftly. Today, we are creating problems we never realized would exist 10 years ago.

"At present new insecticides have come on us so rapidly that we do not have enough research to judge the residual considerations. In time, certain cultural practices, biological controls and insect resistant plants may take the place of insecticides."

Dr. George Ware, entomologist at the Ohio Agricultural Experiment Station, reported feeding various amounts of BHC to 10 dairy cows last summer. The cows received from 1 part per million to 100 parts per million of BHC in their diet.

Although this diet continued for 50 days, even the cows with the large dosages appeared to suffer no ill effects and freshened normally. However, they did store part of the BHC in fat. After the discontinuance of the feeding, cows getting the small dosages ceased giving measurable amounts of BHC in pint samples of milk within 21 days. Results of the large dosages could still be detected in the milk up to 220 days, when the last cow was dried up.

Prof. R. T. Everly, Purdue University entomologist, reported similar

(Continued on page 4)

Senate Committees Move to Hold Farm Support Levels For Unspecified Duration

By JOHN CIPPERLY
Croplife Washington Correspondent

WASHINGTON—In the approval of the price support and acreage allotment "freeze" bill by two Senate committees (Agriculture and Appropriations) two motives appear. In its frenzied haste to punish Ezra Taft Benson, secretary of agriculture, the committee has kicked out many previously well-established congressional policies on farm price support matters. (Croplife, March 10, page 1.)

The "freeze" provides no guide rules for levels of price support as previously provided by formula in regard to the basic commodities and it jettisons the standards under which the U.S. Department of Agriculture was required to operate in setting price supports on non-basic commodities.

It is asked in good faith at USDA if Congress really intended to kill those old guide lines, since the "freeze" measure is indefinite in its duration. This represents a most radical policy decision, it is pointed out.

Secondly, it is wondered if this radical action is anything more than an outright invitation for a presidential veto.

The measures approved by the Senate's committees were:

(1) One bill would freeze price supports for 1958 crops at not less than the dollar and cents levels prevailing in 1957. (2) Also approved was a proposed amendment to the supplemental appropriations act which would at one and the same time provide $300 million to retire cotton acreage into the Soil Bank and authorize an increase in 1958 crop cotton acreage by 30%.

The nature of the agriculture committee's price support freeze measure is such that it will force a White House veto which cannot be overridden, informed Senate sources say.

While a stinging veto is expected

(Continued on page 8)

Inside You'll Find

Acreage Reserve

WASHINGTON—A total of 12,145,528 allotment acres of all wheat, corn, upland cotton, rice and tobacco had been offered for the 1958 acreage reserve on applications signed and filed by farmers through Feb. 28, according to preliminary reports from State Agricultural Stabilization and Conservation (ASC) offices to the U.S. Department of Agriculture. By crops, and within fund allocations, farmers through Feb. 28 had signed and filed applications for 3,091,977 acres of upland cotton, 3,957,237 acres of corn, 131,749 acres of rice, 89,473 acres of tobacco and 4,875,092 acres of wheat (including 3.9 million acres of winter wheat and 975,000 acres of spring wheat).

Robert J. Zedler

PRODUCT MANAGER — Robert J. Zedler has been appointed product manager for Sesone pre-emergence herbicide and Mylone soil fumigant, according to an announcement by Dr. R. H. Wellman, manager, Crag agricultural chemicals department, Union Carbide Chemicals Co., Division of Union Carbide Corp. Mr. Zedler has been directing technical development of Sesone and Mylone. In his new post, he will coordinate both technical and sales development of the two products. He joined Carbide in 1952 after receiving a B.S. in botany from Cornell. Prior to his university training, he was employed as a laboratory assistant at Boyce Thompson Institute for Plant Research, Yonkers, N.Y.

Chemical Employment in California Dips Slightly

SAN FRANCISCO — Employment in chemical manufacturing industries in California declined seasonably between December and January from an estimated 39,300 to 38,500, according to the division of labor research and statistics of the California State Department of Industrial Relations.

The decline was greater than the seasonal dip a year ago, when employment dropped from 39,300 in December, 1956, to 38,800 in January of last year.

The production worker segment, however, earned more money this January. The average weekly earnings were estimated to be $99.64 this January as compared with $98.56 in December and $94.65 the previous January. The increase was due more to an increase in average hourly earnings rather than any substantial changes in the length of the average work week. Hourly earnings were at a new high of $2.44 as compared with $2.42 in December, and $2.30 in January, 1957.

AACCO Announces Personnel Changes

NEW YORK—The American Agricultural Chemical Co. has announced three personnel changes in its production department.

Roy Simm, former northeast division superintendent, has become responsible as manager of the engineering division. He succeeds S. Clifton Pruett, who retired Feb. 28 after 45 years with the company.

S. D. Ward, former superintendent of the Carteret, N.J. fertilizer plant, has become responsible for production in the northeast division. The division includes plants at Carteret; Buffalo and Phoenix, N.Y.; North Weymouth, Mass.; Port Hope and London, Ont., and Ft. Chambly, Que., Canada.

H. C. MacKinnon has become responsible as production superintendent at Carteret.

The company also announced perfect safety records at 11 of its plants. The plant at Spartanburg, S.C. has had no lost time injuries for five years; Henderson, N.C., four years; Cleveland, Ohio, Columbia, S.C., and Norfolk, Va., two years; Alexandria, Va., Baltimore, Md., Cincinnati, Ohio, Greensboro, N.C., Pensacola, Fla., and Montgomery, Ala., one year.

Oregon Adds Rodent Control Specialist

PORTLAND, ORE.—Delegates attending the ninth annual Pacific Northwest Pest Control Operators conference here were told that Oregon's mice infestation has led to appointment of another pest control specialist.

Andrew S. Landforce, rodent extension specialist at Oregon State College, who spoke on the mouse epidemic, said Ed Hansen of Nevada, an Oregon State graduate, will assume his duties April 1 at the college. Mr. Landforce said Mr. Hansen's job will be to develop a program with farmers in controlling the field mouse.

Another speaker, Howard Beaudoin, of Velsicol Chemical Corp., reported that in Washington a pesticide, endrin, has been sprayed over infested areas and in less than three hours the rodents died or became seriously ill. Endrin has not been recommended by Oregon authorities. Farmers in the heavily infested areas of the state, Crook, Deschutes, Jefferson, Lake and Klamath counties, are using zinc phosphide treated wheat.

Delegates at the meeting were also told that the mice are causing extensive damage to eastern Oregon wheat and to Willamette Valley farms.

WACA Meeting

SAN JOSE, CAL.—The annual meeting of the Western Agricultural Chemicals Assn. will be held Oct. 14-15 at the Villa Hotel, San Mateo, C. O. Barnard, executive secretary, has announced.

South Carolina Notes Decreases in Plant Food Tonnages

CLEMSON, S.C. — A decrease of some 85,385 tons of fertilizer has been recorded in South Carolina for the period of July, 1957 to February, 1958, according to a report by Dr. Bruce D. Cloaninger, director of the state department of fertilizer inspection and analysis.

Reductions in the sale of nitrogenous materials were most acute, the report said. Sales for the July-February period of 1957-58 were 43,770 tons as compared to 73,725 tons the same period of 1956-57.

Mixed fertilizers went down to 136,218 tons as compared to 181,987 tons the year before; and phosphatic materials to 9,257 tons from 13,581.

Potassic materials also took a drop, recording only 7,053 tons for the 1957-58 period as compared to 11,631 the previous like period.

Tonnages for February, 1958 as compared to the same month of 1957 showed drastic decreases. Mixed fertilizers dropped from 69,594 tons in February, 1957, to 35,947 tons in the same month this year.

Nitrogenous materials dropped from 40,693 tons to 14,107 tons; and phosphatic materials from 3,364 to 1,878 tons. Potassic materials slipped from 6,123 tons to 3,497 tons.

SQUIRRELS COST MONEY

SACRAMENTO, CAL. — Squirrels have been found to be expensive inhabitants of western pastureland, according to recent findings. Careful record-keeping has revealed that the removal of 100 squirrels from pastures in California resulted in 30 lb. more yearling heifer weight. Efforts are continuing to be made to reduce the number of these rodents from pasturelands.

Potash Institute Grants $6,000 Fellowship

WASHINGTON—A $6,000 fellowship grant supporting studies in fertilizer placement for small grains has been established at Michigan State University by the American Potash Institute.

The grant, which was made to the department of soil science, will cover a three-year period, according to Dr. R. L. Cook, head of the department. The investigation will include laboratory, greenhouse, and field studies.

The purpose is to study the interaction of fertilizer carrier, row spacing and soil nutrient level with fertilizer placement on the small grain. The effects on legume seedings will also be determined. The studies will be cooperatively supervised by Dr. J. F. Davis.

The Michigan State grant is another in a line of fellowships and research grants the American Potash Institute has made to agricultural research and education since 1936, helping train a large number of professional agronomists in some 40 states and provinces, the Institute says.

The American Potash Institute is a research and educational organization maintaining professional staffs in the Northeast, the South, the Midwest, the West, and Canada, cooperating with the agricultural leadership of each area.

Manufacturing Chemists Plan Summer Meeting

WASHINGTON—The 86th annual meeting of the Manufacturing Chemists' Assn. will be held June 12-14 at The Greenbrier in White Sulphur Springs, W.Va., according to an announcement of MCA. It is anticipated that more than 700 chemical industry executives will attend.

S. B. Penick, Jr., president of S. B. Penick & Co., is program chairman.

James C. Lamb

JOINS SINCLAIR—Sinclair Chemicals, Inc., a wholly owned subsidiary of Sinclair Oil Corp., has announced the appointment of James C. Lamb as sales representative, nitrogen products division. Mr. Lamb will handle sales of Sinclair anhydrous ammonia and nitrogen solutions in Illinois, Wisconsin, and portions of Iowa and Minnesota. A native of Janesville, Wis., Mr. Lamb received a bachelor of arts degree from Ripon College in 1951, and a bachelor of science degree in soils from the University of Wisconsin in 1955. He was employed by Allied Chemical and Dye Corp. prior to joining Sinclair Chemicals, Inc. He also served in the infantry in Korea and was discharged with the rank of 1st lieutenant. Mr. Lamb's headquarters are in Rockford, Ill.

Hercules Sees Widespread Use of New Miticide

WILMINGTON, DEL. — Hercules Powder Co. said here recently that it expects its relatively new miticide, Delnav, to find widespread usage this year for control of mites and other insects on cotton, citrus and ornamentals. Label approval has been granted for use of the product as a miticide on cotton, certain ornamentals and nonbearing citrus.

Hercules said that mites and insects against which Delnav is effective include two-spotted mite, European red mite, clover mite, Pacific mite, spruce spider mite, citrus red mite, six-spotted mite, Yuma mite, silver mite, millipedes, rosy apple aphid, codling moth, cabbage looper, imported cabbageworm, leafworm, thrips, leafhopper, Colorado potato beetle and potato flea beetle.

Delnav also shows promise for the control of alfalfa caterpillar, potato leafhopper, rust mite, citrus mealybug, cottony cushion scale, serpentine leaf miner, citrocola scale, soft scale, pear psylla, potato tuberworm, tomato russet mite and symphilids, the firm said.

Chemically, Delnav is described as 2,3-p-dioxanedithiol-bis-(O, O-diethylphosphorodithioate) and related compounds, and is available as an emulsion concentrate. Delnav is compatible with all commonly used insecticides and fungicides, Hercules said.

AEC Contracts

WASHINGTON—The U.S. Atomic Energy Commission has awarded two contract renewals for physical research work in the field of agriculture. The two studies are utilization of phosphorus from biological material and uptake of stronium by various type crops—W. H. Fuller and W. T. McGeorge, $6,000, and use of radioactive tracers in investigations of the mode of action of insecticides with emphasis on potential systemic or chemotherapeutic action, C. C. Roan, Kansas State College of Agriculture and Applied Science, $8,300.

Pennsylvania Turfmen Hear Reports on Ureaform Nitrogen

UNIVERSITY PARK, PA.—Discussion of the new ureaform nitrogen, designed to keep lawns, gardens, golf courses and public park grasses growing throughout the season with only one or two applications, held a key spot in conferences for turfmen and nurserymen recently at the Pennsylvania State University.

The nitrogen fertilizer is ureaformaldehyde, a synthetic compound made from urea and formaldehyde. It releases its nitrogen slowly to plants. Turfgrass studies at Penn State show that ureaform produces grass more steadily over the season than the commonly used forms of soluble fertilizer.

"Ureaform has the advantage of lasting much longer than the old type fertilizers without excessive growth of grass at any one time," stated H. B. Musser, in charge of turfgrass research at Penn State. "Since it releases nitrogen slowly, u r e a f o r m needs a higher rate of application than other chemical fertilizers."

Mr. Musser said any fertilizer made for home use and containing ureaform should carry from 50 to 75% of the nitrogen in ureaform. He suggested it should be applied at the rate of not less than 20 to 50 lb. per thousand square feet. depending on the total amount of nitrogen as shown by the analysis on the bag.

One speaker reported he saw roses growing vigorously one year after use of this synthetic nitrogen. The ureaform had been mixed into the rose bed before planting. No additional fertilizer had been added during the year.

Purchase prices of ureaform fertilizers are higher than standard fertilizers, it was noted. However, the factors of lasting nitrogen and less labor in applying—plus elimination of excessive lawn growth and elimination of frequent mowing—make these u r e a f o r m fertilizers attractive to home owners, Mr. Musser said.

Ureaform nitrogen can be bought alone or in combination with balanced fertilizers containing superphosphate and potash.

"One application of ureaform for lawns is equal to four or five applications of natural organic fertilizer," declared Dr. Fred V. Grau of the Nitroform Agricultural Chemical Co.

Much of the ureaform will remain on lawns or in the soil for relatively long periods without leaching out, even over the winter, according to Mr. Musser. This will provide enough nitrogen to get the grass growing early in the spring, he said.

Proper application of 2,4-D to avoid injury to grasses in the seeding stage was discussed by Richard E. Schmidt, graduate assistant in agronomy at Penn State. He said a one-half pound rate of 2,4-D per acre is less injurious than a one pound rate for bentgrass, fescue and Kentucky bluegrass.

At all times bentgrass recovered sufficiently when applications were made at 10 weeks of age. Bentgrass showed some injury with both 1 lb. and ½ lb. applications. Spring and summer treatment of 6 weeks old fescue showed sufficient recovery 6 weeks after application. Fall seeding of fescue showed only slight injury from 2,4-D. If Kentucky bluegrass is treated at 4 weeks of age or older, it recovers within 6 weeks for spring and summer seedings.

Turfmen felt that putting on fungicides has become almost an "aerosol" technique. Low pound pressure is better than high pressure, declared H. B. Couch, of Penn State's turfgrass research project. He recommended about 30 lb. pressure for applying fungicides. The pressure should be low enough to break up the material and get it onto the surface, Mr. Couch advised. He suggested 2 gallons of fungicide per thousand square feet for leaf spot control. Some places recommend 5 pounds per 1,000 square feet, it was pointed out.

Minnesota Fertilizer Mixes Down; Straight Goods Show Increase

ST. PAUL, MINN.—Tonnages of mixed fertilizers showed a decrease for the last half of 1957, but use of straight materials gained in the period of July 1 to Dec. 31, 1957, according to the semi-annual report on fertilizers compiled by the division of feed and fertilizer of the Minnesota state department of agriculture. Mixed fertilizers sold during the last half of 1957 totaled 45,674 tons as compared to 71,328 tons in the same period of 1956. Straight materials moved from 18,978 tons in 1956 to 26,479 tons last year.

The most popular grade both years was 5-20-20, but sales during the 1957 period fell off by nearly 7,000 tons compared to the previous year's last half. The figures were 16,443 tons for 1956; 9,497 tons for last year. Next most popular grade was 6-24-12, which sold less than half as much in 1957 than it did in 1956. The respective tonnages were 6,009 tons and 12,196 tons.

The grades of 0-20-20 and 0-30-15 were also popular, but both suffered decreases last year as compared to 1956.

Straight materials enjoyed a gain during the last half of 1957, with much of this progress being made via anhydrous ammonia which was used in the amount of 4,275 tons in the 1957 period as compared to 1,101 tons during the same period of the year before. Ammonium nitrate also showed an increase. It registered 4,897 tons in 1957; 2,461 tons in 1956. Nitrogen solutions showed a significant gain, from 258 tons in 1956 to 2,170 tons in '57.

Muriate of potash also increased. It went from 2,609 tons in 1956 to 2,895 tons last year. Both normal and concentrated superphosphates took a drop during the 1957 period. Normal slipped from 2,584 tons to 1,481; concentrated superphosphates from 8,217 tons to 7,538 tons.

AMMONIA MEETING

MINNEAPOLIS—The spring meeting of the Minnesota Anhydrous Ammonia Assn. will be held March 24 at the Normandy Hotel, Minneapolis, announces Dale W. Anderson, Ortonville, Minn., president. The meeting will be preceded by a social hour beginning at 11:30 a.m. and a luncheon.

OHIO CONFERENCE

(Continued from page 1)

results in tests made in Indiana. These studies are part of a feed, foods and forage study being made at these experiment stations as a North Central States Regional project.

Ohio is recommending the use of BHC only in cases where the crop will not be fed to dairy animals or animals fed for slaughter, according to Dr. C. R. Neiswander, chairman of the entomology department of the Ohio Agricultural Experiment station. Otherwise, he added, heptachlor and methoxychlor are recommended for use, if possible.

Dr. Osmun reported that Indiana's recommendations for 1958 have not as yet been printed; however, he believes that with airplane application a farmer almost has to use BHC to get sufficient control of spittlebug. With ground applications, he added, the farmer can use less powerful insecticides.

He feels BHC applied 30 days or more in advance of harvest would be relatively safe, especially if it is applied very early so the growth dilution will help cut down residue.

Prof. Everly said he had used heptachlor for spittlebug successfully with ground application. This insecticide, he stated, should be applied early, before the leaf cover becomes heavy enough to prevent good penetration. Plenty of water should also be used.

Dr. Lyle Goleman, extension entomologist at Ohio State University, said he is suggesting two pints of heptachlor with at least 10, and up to 20, gallons of water per acre. Others at the conference reported as good results with granular heptachlor as with an emulsion.

Dr. M. C. Wilson, Purdue entomologist, gave a rather optimistic outlook for the northern states in the control of the spotted alfalfa aphid. He predicts it will not become a serious epidemic every year in these states. The aphid appeared in two Ohio counties in 1957 for the first time in that state.

The aphid does not survive cool temperatures, Dr. Wilson explains, although it does spread rapidly in high temperatures and under drouth conditions. The aphid appeared not to survive the northern winter in 1956-57, but it did survive further south. The infestation in northern areas may depend largely on how close to the area the aphid overwinters, he remarked.

Dr. Wilson, who will leave soon to study the aphid in the Southwest where it has caused most damage, admits that the spotted alfalfa aphid has entomologists over the country rather baffled—never had anything spread so rapidly nor devastated so much of a single crop. Still, he contends, as yet there has been no infestation in Indiana or Ohio which would warrant control measures.

Treatments are being studied and, in the Southwest, airplanes are being used extensively to treat alfalfa. There, he explains, the crop is being grown for seed and will permit expensive insect control methods. The University of California, he adds, recommends systox. Dr. Wilson expects natural enemies to come along and help control the spread of the aphid. He also noted that some aphid resistant strains of alfalfa have been found.

Stewart's disease on corn, which is carried by the corn flea beetle, appears to vary in intensity with the winter temperatures, Dr. C. R. Neiswander stated. The winter temperature index, which consists of the sum of the mean temperatures for December, January and February, is a fairly reliable guide to whether or not the disease will be serious the next season.

"We think the insects are more affected by extremes than averages," Dr. Neiswander explained, "but those are hard to measure." He added that, in general, if the sum of the mean temperatures for the three months totals 90 or above, the disease will be serious; however, lower totals mean a correspondingly lower infestation. For instance, at Wooster, Ohio, December of 1957 had a mean of 34.1, January, 1958 had 24.5 and February (through the 25th) had 18. This gives a sum of 76.6 which indicates little trouble this season.

On the other hand, Dr. Neiswander reported that corn borers are not affected greatly by the cold. In fact, researchers at Wooster have frozen borers in ice without apparent injury to the borers.

Last summer, James Henry, agricultural engineer of Ohio State University, supervised corn borer control tests on the Arthur Smith farm near Columbus, where 100 acres of sweet corn were grown. Both ground and aerial applications were used. Four plots treated with heptachlor, two with DDT and two check plots showed the following results:

Granular treatment	Borers per 100 plants	% control
Check—not treated	164.9	...
DDT 5% gran. (30 lb. per acre)	14	91.5
Heptachlor 2½% (30 lb. per acre)	8.9	94.6

These treatments were made on June 17 and again on June 25. Data was taken July 9.

The Ohio Experiment Station is still recommending 1½ lb. DDT per acre. Dr. Neiswander feels a man must learn to tell when control treatment is needed for his corn. "Wait until the plants show some crown feeding," he advised. Treat sweet corn if the infestation reaches 35 to 50%; field corn can stand an infestation of 75%, he added. He expects a low infestation this year.

Winter cover crops for corn fields have had a recent dramatic rise in popularity in northwestern Ohio, according to Glen Bernath of the USDA Soil Conservation Service. The high percentage of successful plantings, he believes, is probably due to a combination of high fertility levels, favorable soil conditions in the lake plains area and good timing of seedings by farmers.

Fertilizing forests, especially those on sandy soils, has a real future, Dale T. Friday, Allied Chemical and Dye Corp., believes. He noted that a number of tests on such fertilizer use are now in progress. One of these includes fertilizing sugar maples.

During the panel discussion on general insect control problems, it was noted that in some Ohio counties corn leaf aphids were a serious problem last year. In many fields at least 50% of the stalks were barren.

Dr. C. R. Neiswander said very little research has been done on the control of this insect. He said that in 1957 the Ohio Experiment Station suggested malathion as a control, but some farmers used TEPP. In both cases the treatments cut the infestations considerably; however he didn't think the control helped the corn crop because yields on treated areas were no larger than on untreated areas.

Since bad corn leaf aphid infestations can be expected only about once in every seven or eight years, Dr. Neiswander does not foresee any big problem in 1958. Aphid infestations usually come after rainy periods in July, which are followed by dry periods later, he said.

Dr. Wilson said that because of the striking appearance of the corn leaf aphid, farmers often become alarmed. He does not believe treatment will repay its cost after pollination has taken place.

Dr. J. P. Sleesman, Ohio Agricultural Experiment Station, entomologist, reported that a new insecticide, "sevin," has been very effective against the Mexican bean beetle. Researchers are hoping to clear it for use in 1959. This, he believes, should also be effective against the bean leaf beetle on soybeans.

Dr. Ralph B. Neiswander, Ohio Agricultural Experiment Station entomologist, said the pine shoot moth can be controlled with DDT, if it is used at exactly the right time and if all growing tips are thoroughly wet. Usually, he explained, the insects are exposed only from about June 25 to July 5 and again for about 10 days in mid-April the following year. The moths don't eat much of the insecticide but must get it from crawling.

Ernest Bower of the Aerial Agricultural Service, Grove City, Ohio, reported 80 to 90% control on pine sawfly on small trees with applications of three quarts of 25% DDT and four gallons of water per acre. On larger trees the application was increased to one gallon DDT in four gallons water. In some instances more carrier was used.

Mr. Bower said sawflies seem to work toward tree tops. Often they stopped working within six to eight hours of treatment. Let most of the worms hatch, then spray, he advised. He also reported using DDT with malathion to control spider mites. Much of Mr. Bower's aerial applications has been on nursery and Christmas tree plantings.

Good mosquito control consists primarily in elimination of breeding areas, according to Dr. Carl Vernard, Ohio State University entomologist. Next in importance comes the control of eggs. Adult control measures bring few results, Dr. Vernard said.

Although the use of airplanes to spray breeding places with larvacides can be effective, most places in Ohio which breed mosquitoes can't be sprayed, he remarked.

Don Arbaugh, Ellwood City, Ind., branch manager of Bowes and Co., added a cheerful note to the conference when he said that aerial applicators are the one group for which insurance rates are not being raised at present. He commended them for their record of safety.

Dr. C. R. Neiswander urged the applicators to leave check blocks wherever possible when they are spraying or dusting. These blocks, he believes, will both advertise the effectiveness of the treatment and help the researchers gain valuable data.

Howard B. Taylor, head of the Division of Aviation, Ohio Department of Commerce, and chairman of the conference, concluded it by saying that "we sell aerial application through better equipment which permits better work. The quality of equipment has improved markedly in the past few years."

OHIO-INDIANA CONFERENCE—Here are two scenes from the recent Ohio-Indiana Agricultural Aviation Conference. Shown in the top photo discussing aerial applications of insecticides and other materials are, from the left, Dr. J. V. Osmun, Purdue University entomologist; Howard B. Taylor, Division of Aviation, Ohio Department of Commerce, and chairman of the conference; George Whysalf, applicator from Archbold, Ohio, and R. D. Barden, head of the agricultural engineering department, Ohio State University. In the bottom photo James Henry, agricultural engineer at Ohio State University, shows a group of applicators the distributor he developed through experiments in distributing granular and powder materials. He also developed a metering device for the plane. From left to right are Mr. Henry; Pete Johnston, Milan, Mich.; W. W. Snyder, Fostoria, Ohio, and Bob Ueding, Vincennes, Ind.

Herbicides Trim Cost of Weed Control in Ditches

SACRAMENTO — Spray chemical test plots for killing weeds in drainage and irrigation ditches have been yielding good results in Sutter and Yuba counties in California, and thus far indicate large financial savings may be effected.

The tests are being conducted through cooperation of University of California extension workers in the two counties.

One of the most striking examples was in the Nicolaus area of Sutter County. Winfred McGuire, road foreman, reports applied sprays costing $1 to $2 per mile of roadside ditch will replace previous costs of up to $350 per mile for dragline cleaning of cattails.

Spraying also eliminated the deepening and widening of channels with resultant pooling of water in dragline operations.

Mr. McGuire applied a mixture of four pounds of amino triazole and eight pounds of dalapon with 12 ounces of a sticker spreader to 200 gallons of water. The first spray was considered 95% effective with rapid translocation of the spray to plant roots. A second mop-up spray was applied to kill the remainder and the dead plants were then burned to clear the ditches completely.

In another test, a new, heavy growth of parrot feather weed in reclamation district ditches near Live Oak, Sutter County, appears to have been brought under control with applications of the amine form of 2,4-D applied at the rate of 2 lb. liquid per 250 gallons of water. The sudden growth of the weed last year almost completely blocked the district's ditches.

A more difficult problem for research was that of an irrigation district in Yuba County where anachris water weeds have been blocking ditches and causing them to overflow. By hand cleaning, the cost was $700 to $1,000 per year.

C. E. Magerus, manager and superintendent of the district, reports use of a solvent naphtha compound has been effective in disintegrating the pest which then floats away. The compound has not proved harmful to stock or clover pastures.

NEW SALESMAN NAMED

WATERTOWN, MASS. — The appointment of Malcolm S. Cone, Jr., as exclusive sales and service representative in Western Tennessee, Arkansas and Northern Mississippi has been announced by Lewis-Shepard Products, Inc., Watertown, producer of electric fork lift trucks and related materials handling equipment. He will make his headquarters in Memphis, Tenn.

MARS FLORA SOUGHT

NEW HAVEN, CONN.—Although scientists at the Connecticut Agricultural Experiment Station are accustomed to various requests for information on plants, a recent visit from an 8th grade boy marked a new direction for queries. The youngster wanted help in selecting plants suitable to grow on Mars. He said he wasn't planning on making a trip there right now, having halted work on his rocket for the time being but, he does hope to create in a bell jar something approaching the atmosphere of Mars and see how plants respond.

No data was immediately available on the subject, but station personnel discussed photosynthesis, oxidation and reduction, plant species and general scientific methods with the young investigator. He said he'd keep the scientists posted on his progress.

SKY'S THE LIMIT . . .

Mechanical Side of Aerial Application Shows Upswing; More Operators Needed

Aerial agriculture has come of age, and farm managers are working out new methods to make aerial application of seed, fertilizers, insecticides and herbicides more profitable to them. Also interested in helping, are a number of aircraft companies who see promise in agricultural aviation.

Since 1950, agricultural aircraft in the U.S. have applied greater tonnage of seed, fertilizers, insecticides and herbicides than the total tonnage of bombs dropped by the U.S. Air Force during World War II. And it's been done mostly with outmoded, surplus war-wearies, originally built for missions of destruction.

The history of agricultural aviation and surplus aircraft has always gone hand in hand. Back in 1917 the USDA, using a surplus JN-9 "Jenny" of World War I fame, dusted a cotton field in Louisiana. In the next 10 years the Jenny became standard equipment for aerial application. Following World War II, the Stearman, a converted training plane, became the work horse of the aerial application business.

While both ships did yeoman service, it is generally conceded that they are becoming inadequate, and increasing maintenance costs are forcing application expenses higher and higher.

Aircraft executives, beset with requests from farmers, started a series of experiments to see if a commercial agricultural aircraft could be designed. Texas A&M, working with the USDA designed the Ag-1. This aircraft utilizing the latest of design features combined safety features and high load capacity with minimum operational costs. However, before it could be put to any productive use by one of many interested companies it was destroyed while landing.

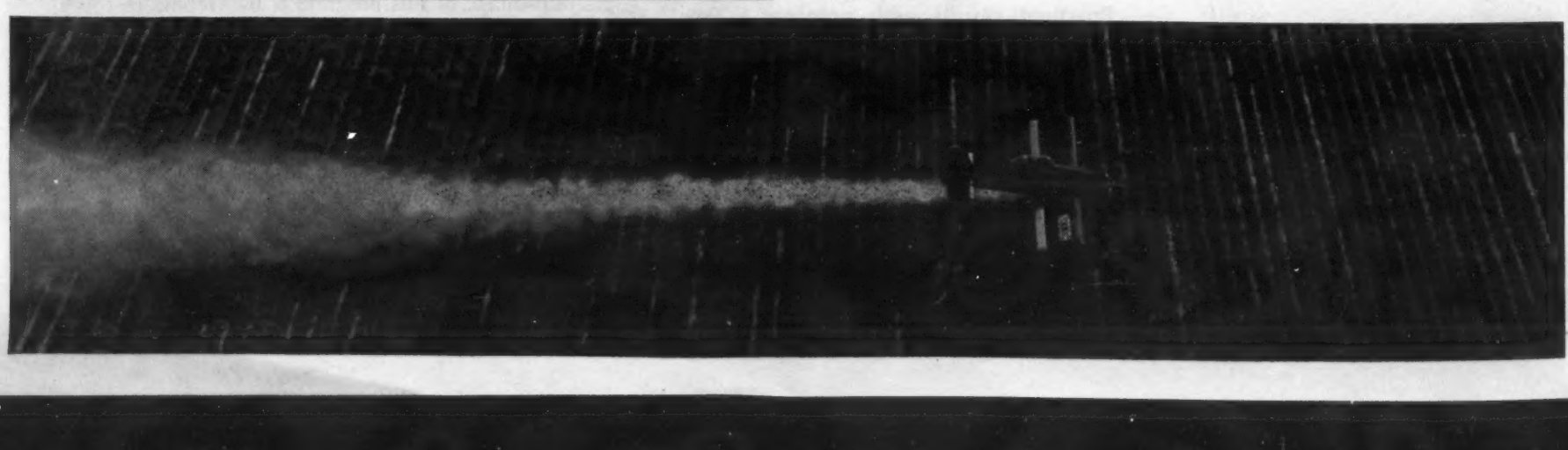
Transland Aviation, Torrance, Cal. utilizing the construction plans of the Ag-1 came up with a newer version, the Ag-2. The Ag-2 took off on her maiden flight Oct. 11, 1956, thus putting into the air the world's first commercially designed aircraft for farm and forest needs.

Other firms also contributed ideas and materials to the cause, with varying degrees of success. Fletcher Aviation, a small manufacturing concern in Pasadena, Cal. redesigned their utility aircraft and aimed it at the farm and agricultural market, but American pilots were cool to this machine. However, upon taking a prototype aircraft to New Zealand, the Fletcher group revolutionized farming "down under." The craft, which was an open cockpit, monocoupe, flew many thousands of hours for various New Zealand concerns under conditions far from ideal. After the show was over, the Fletcher utility craft was termed as "superb," and better than anything being used in the country.

Another of the heavier and higher load carrying agricultural aircraft is the Fletcher FU-24. This aircraft is designed as a utility ship, like the prototype, and is used for both cargo carrying and agricultural needs. Minimum speed of this craft, with flaps down, power on, is 42 mph. Take off speed at 3,000 ft. is 52 mph., however, the FU-24 will cruise at 110 mph. with an effective range of 500 miles.

CHEMICAL APPLICATION BY AIRPLANE—Title photo, above: workhorse Stearman biplane, left, equipped with spray booms, and sleek new "Ag-2," specially constructed application unit engineered for safety, reliability, and relatively low speed. At the left, top photo, is the Fletcher FU-24 in flight, laying down a dust screen. Note how the stream is thrust downward to minimize drift. Below it is the Piper PA-18A spray rig, with boom and air-driven pump visible.

The two craft pictured together are the Call-Air A-4, at left, and the Rowden F-1 at right. Below these ships is a Stearman in action doing a spray job. Man in picture, who looks like he should duck his head, is Jack Meyers, Houston, Texas, rancher and vegetable grower. Across the bottom of the page is a birds-eye view of a low-flying Transland Ag-2 doing a dusting job over a neatly-rowed field.



Farm managers and owners, operating off their own air strips, have been investigating this craft for possible use as both a duster-sprayer and private plane. A newly designed Fletcher spray system can be utilized for spray operations, while the duster hopper utilizes a Neilsen wing, ram-jet type distributor.

Reports are that at minimum speed of 52 mph and utilizing a Neilsen distributor, swaths of 45-50 ft. can be effectively controlled for laying down chemicals, seed or other items without drift. In a cross-wind of 18 mph at heights of 10-25 ft. at speeds of 52 mph (approximate) there was less than 5% drift noted in tests.

In general, the FU-24 has proven to be versatile, according to users of the craft.

While heavier pay loads are profitable in some areas, has anything been done for the small operator who works on short fields? Barlow H. Call, general manager of Call-Air, Afton, Wyo. recognized that these operators could not easily afford the heavier aircraft which cost in the $20,000-$40,000 price range. As a result of much study and standard design techniques, the Call-Air A-4 was developed. This is a fabric-covered aircraft with a special modified Clark Y highlift air foil.

Designed for super-safety, the A-4 will carry a payload of 1,130 lb. at a speed of 45-50 mph. One of the safety features is that the hopper and the pilot are side by side. Thus, in case of an accident, the load is not likely to injure the pilot.

Another entry in the agricultural aircraft field is the Rowden T-1. Utilizing external struts, this tiny monoplane is capable of carrying 1,000 lb. at 52 mph. Little is known about the ship since it is still in the experimental stage.

Application of fertilizer by the aircraft mentioned above averaged $2.26 an acre over a test area of 14,736 acres in 408 plots. Spraying costs over 927 plots totaling 60,330 acres were an average of $1.33. Dusting application on 14,736 acres was $1.46 per acre average and seeding and other aerial applications averaged $1.44 per acre. Costs ranged from $2.05 for the lighter planes to $2.41 per acre for dusting and other cost ranges spread in equal porportions for other types of application.

Gale Hanson, manager of the aviation division for United-Heckathorn, and vice president of the National Aviation Trades Assn., reported that under certain conditions the use of C-82 cargo planes could be economical for spray application.

He cited several jobs done by United-Heckathorn such as the spraying of Glacier Park in 1957 and the spraying of New Jersey and New York woodland to eliminate the gypsy moth.

Planes for aerial spraying are divided into two types: Those over and under the break point of 12,-500 lb. gross weight. "In recent years," Mr. Hanson says, "there has been a great increase in interest in large aircraft for spray operations, because of the economy which they offer and the speed that can be counted on to complete the big spraying jobs.

"The prime need to help make the aerial spraying business safer is adequate training of personnel before they are put on their own." The exercise of good judgment is absolutely necessary, since wrong decisions can cost lives and at the same time destroy a million dollars worth of equipment, he added.

Mr. Hanson went on to say, "More basic regulations are needed by CAA." He estimated that there are approximately 1,500 aerial applicators in the country, operating 5,000 planes, which are flown at different times by as many as 10,000 pilots. They apply a billion pounds of dry chemicals and a hundred million gallons of liquids. The basic earning capacity of this equipment is $100,-000 a year.

Mr. Hanson was quick to point out that while aerial spraying obviously involves a substantial element of hazard, insurance rates are no higher than those in force in the construction field.

"In 1955," Mr. Hanson says, "Aerial crop spraying and dusting accidents in 851,960 hours flown, totaled 3.72 per 10,000 flying hours. Of these 0.63 were fatal. The four main reasons for these accidents were failure to maintain flying speed, failure to observe aircraft, misjudging distance and inadequate flight preparation."

LeRoy Lampson, Robins, California farm manager, aerial applicator and member of the California Aeronautics Commission wrote recently, " . . . It is our conservative estimate that some 30-40% of our pilot population and aircraft are not properly equipped to so operate." He made this statement in reference to pilots within the boundary of his state, operating from one of the flight strips within the state. Of the more than 150,000 aircraft operating in the U.S. 13% are in California, Mr. Lampson reported.

Following the tragic collision between two military planes in Norwalk, Cal. Mr. Lampson was asked, "How will this affect agricultural aircraft operating in high density areas?" He answered, "It certainly is reasonable to suppose that the CAA and the CAB will undoubtedly be forced into the position of declaring at least the Los Angeles area a high density traffic area. What this means in plain language is that no aircraft will be permitted to come and go in the Los Angeles area unless it is under control of some sort.

"The Aeronautics Commission views with considerable alarm this result and has been doing everything possible to avoid it because we recognize that such restrictions will set aviation back a good many years in California. Obviously, if the farmer can't have the freedom to use his aircraft to come to the city, and if the urban dweller has to drive 100 miles to the country to use his aircraft, it will considerably lessen the incentive to own one and operate it."

Mr. Lampson wrote that the agricultural applicator's living was being held in jeopardy by possible CAA regulations restricting his flying space. "You asked for our opinion of possible legislation that would make flying safer," Mr. Lampson wrote. "We do not feel that this is a problem that can be adequately approached from a legislative point of view at this time. You can see that this is not a problem for any one group, but one affecting a great many people and certainly vitally affecting the freedom and growth of general aviation itself."

Despite the danger of CAA backed

(Continued on page 19)

PRICE-SUPPORT FREEZE

(Continued from page 1)

to the price freeze bill, if it passes Congress, there is still another aspect which must have consideration at this time.

As the Senate Agriculture Committee went through the gyrations reported above—the action which is expected to get a veto which cannot be overridden—it at the same time approved a simple bill to retain the price supports on dairy products for 1958 at 82.5% of parity.

Secretary Benson had previously reduced those supports to 75%.

This measure was introduced by Sen. George A. Aiken (R., Vt.). It is believed that this measure will also pass at some stage in the legislative shambles and will not get a White House veto.

It may ultimately be the only piece of farm legislation on price supports that passes this Congress and is enacted into the law.

The appropriations bill for the Soil Bank was primarily designed, when it passed the House, to provide additional funds for the Soil Bank's acreage reserve program for cotton and corn, since those farmers have made applications for Soil Bank participation far in excess of funds which have been available.

The House Appropriations Committee earlier approved a grant of an additional $250 million to cover the excess of participation requests over the available funds at that time.

The Senate Appropriations Committee, however, plans an even further step in regard to cotton. As it got the House bill, there was an item increasing Soil Bank funds for removal of cotton acreage to the ARP phase of the Soil Bank of approximately $300 million.

The Senate committee promptly accepted the Soil Bank money increase, which would remove approximately 5.1 million acres of cotton land and more than seven million acres of corn land from crop production, but at the same time it instructed its chairman to propose an amendment to the House bill when it reached the Senate floor.

This amendment would grant cotton farmers approval to increase their acreage allotments by 30% over the allotment authorized at this time under the law.

As an alibi for this strange piece of business, sponsors of the legislation said that, since the increased acreage would not be eligible for Soil Bank payments or price supports for the 1958 crop, it did not cause the extraordinary contradiction which a sane person might detect in the Senate plan.

It will be necessary for the Senate committee to obtain a two thirds vote in favor of suspension of its rules to take up this amendment, but even the senior chamber is expected to agree to pass this bit of legislative fantasy.

Congress was not content to freeze the price support levels to those of last year in terms of dollars and cents, and to pay the cotton farmers cash to remove acreage from production with one hand and then give it back with the other. It was equally attentive to the corn farmers.

As it approved the price support freeze measure, it agreed to increase the corn acreage allotment from the present statutory level of approximately 38 million acres this year, to 54 million.

But in the appropriations measure, it provided $300 million for corn farmers to remove approximately 7.25 million acres of corn land in the commercial Corn Belt from production to participate in the Soil Bank.

Somehow, it all does not seem to make sense. It must be wondered what the American farmers think about all this.

How the corn acreage increase measure for the 1958 crop will fare is an obscure matter.

It must be noted that it is most difficult to reconcile two bills which are aimed at accomplishiing the oppositive objectives.

The Senate ideas on the appropriations bill to spend $300 million to reduce corn acreage and the Senate Agriculture Committee bill, which would increase corn acreage by nearly 16 million acres, might be called sheer prodigality with the taxpayers' money.

Sen. Allen J. Ellender (D., La.), Senate Agriculture Committee chairman, saw in the committee action a regrouping of the old farm bloc and a slapping rebuff to Secretary Benson.

To others it is described as perhaps the last stand of a desperate, shattered farm bloc which will wind up this session of Congress with empty hands.

R. A. Wells, Bemis Official, Retires

ST. LOUIS—R. A. Wells, manager of the Bemis Bro. Bag Co.'s cotton mill at Bemiston, Ala., has retired after completing 46 years with the company. He was succeeded by E. P. Eldred III, who formerly served as assistant manager.

Mr. Wells joined Bemis after graduation from Harvard in 1912. His first position was that of clerk in the Boston office, followed by appointment as auditor in the St. Louis office. He later returned to Boston as assistant to A. F. Bemis, then president of the company.

Mr. Wells was named assistant manager of the Bemiston cotton mill in 1929, following a year's assistantship to the manager of the San Francisco plant. He became manager of the Bemis mill in 1930, a position he held until his retirement.

Mr. Eldred was born in Boston and attended Dartmouth College where he received a bachelor of arts degree in economics. He joined Bemis in 1940 and served as trainee in the Boston cotton goods department until 1941, when he was appointed buyer for the New York cotton goods purchasing office.

After serving as a lieutenant in the Navy from 1944 to 1946, Mr. Eldred returned to Bemis as a member of the Bemiston textile engineering department. He was appointed textile engineer in 1949, and returned to Boston cotton goods department, where he became chief textile engineer in 1952.

CHEMIST NAMED

WILMINGTON, DEL.—The appointment of Dr. Alfred J. Restaino as radiation chemist in the chemical research department of Atlas Powder Co. has been announced by Dr. W. H. C. Rueggeberg, department director.

Special Merchandising Section

Better Selling

Marketing News and Features

Are Your Merchandise Lines Paying Their Rent?

By Leo V. Aspinwall
Head Marketing Division, School of Business, University of Colorado, Boulder, Colorado

Customers moving in and out of your front door behave just about as do people on the street. Those who know what they want try to go directly to that item. People with no specific items in mind move from place to place as their interest is caught by goods on display. These two types of traffic are known as destination traffic and shopping traffic.

Destination customers tend to move in a logical, thought-out sequence. Shopping customers, taking a largely random approach, almost always turn to the right after they enter your front door. Destination traffic generally will not drift to the right because of the slower and unpredictable movements of the shoppers. Instead, these customers usually turn left upon entering a store. As a result, shopping traffic tends to circulate through a store in a counter-clockwise direction, while destination traffic moves clockwise. Recognition of this movement provides a key to the layout of goods not only near the door but also within the entire selling space.

Goods with low gross margins and high replacement rates should be located conveniently, say, on a 45° angle to the left of the entrance. This location will afford destination customers immediate access to the staples they buy frequently. It will help them complete their purchases quickly. In contrast, the high gross margin items with low replacement rates should be arranged on the right. When this is done, these goods are seen by the bulk of the shopping traffic; as a result, sales of these items tend to increase.

RENTAL VALUE OF SELLING SPACE: Because the space nearest the traffic flow offers the greatest exposure to customers, it has the greatest sales potential. For this reason, the front part of your store is the most valuable. Towards the rear, values decrease. These relationships may be expressed in mathematical terms by the so-called "4-3-2-1 rule," or by the "average rate of value decline," both of which are used in analyzing selling-space values.

• **The 4-3-2-1 Rule.** Suppose, for instance, that you had a simple, middle-of-the-block, one-story store. You have a 50-foot frontage and a depth of 100 feet. The area within the building contains 5,000 square feet each of which must earn its share. The 4-3-2-1 system is a straight-line approach to measuring the decline in space value as the distance from the front of the store increases. It is used as a rough approximation of the relationships between the values of the various spaces occupied. The application is explained by diagram 1.

It points out the need (1) for larger sales in the front part of the store in order to support the higher value of that space, and (2) for goods to be arranged so that shopping traffic moving right will be exposed to high gross margin goods while destination traffic moving left will quickly find low gross margin goods.

Many small retailers believe that placing staple items at the rear of the store will cause customers to pass displays of high-margin goods from which they will make impulse purchases. This is sometimes true (for instance, in certain types of firms such as grocery stores where customers typically purchase a number of items at one time), but it is not an infallible rule. Some customers with routine needs resent being obliged to go the full length of a store to get what they want. In fact they may refuse to do so and simply seek another store where these goods are up front.

To be sure, physical elements such as pillars within the store space and the placement of entrances do affect the arrangement of goods. They cause some stores to present what may seem to be a contradiction of these general rules. Nevertheless, alert merchants try to correct undesirable elements so that their stores do follow the normal pattern as much as possible.

• **Average Rate of Value Decline.** While the 4-3-2-1 rule is useful as a rough technique, it lacks accuracy. Therefore, if greater precision in measuring space values is desired, then the so-called "average rate of value decline" method should be used.

This approach, being technical, requires specialized knowledge which most retailers have to hire. As a result, it is often more costly than the value of its findings to very small concerns. However, retail stores having more than 1,500 square feet of floor space (30 by 50 feet, for example), should be able to absorb the cost of such an analysis and still make money by rearranging goods according to the findings.

The decline in space value may be presented graphically by what is called an "(r) Factor Curve." It is based upon the fact that, in practice, space values don't drop off at an even rate toward the rear of a store. They decline more rapidly in front than they do in back. The "Curve" is figured out by a statistical analysis of actual customer traffic. From this analysis, a curved line is plotted on a graph. This line shows the change in space values from one part of a building to another. Once the chart is completed, the value of any given location in a store can, as it were, be "looked up."

Diagram 2 shows what the (r) Factor Curve would look like for the same store illustrated previously in diagram 1. Line "A B" represents the 100-foot depth of the store divided into 20 bands of 5 ft. each. All the area from the front of the store back to the line called "average rent" is worth more than the average rent (48¢ per square foot per year). All the space from the "average rent" line back to the rear of the store is worth less than average.

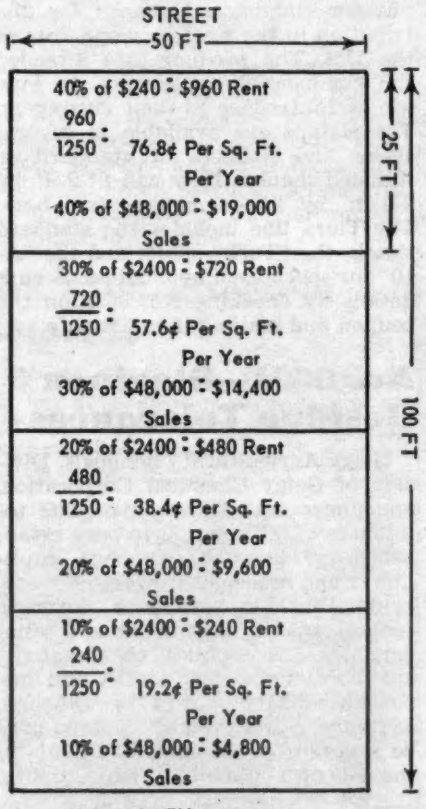
Comparing the values in diagram 1 with those in diagram 2 will highlight the short-comings of the 4-3-2-1 system. For example, the space value at line "X" by the 4-3-2-1 system is around 77¢ while the (r) Factor Curve method puts it at $1.43. At line "Y" the value by the 4-3-2-1 system is about 38¢ in contrast to the (r) Factor Curve figure of only 18½¢. Back at line "Z" the 4-3-2-1 system puts the value at around 19¢ as compared to a (r) Factor Curve value of 8¢.

COMPUTING NEEDED FLOOR SPACE: The (r) Factor Curve is also

(Continued on page 14)

DIAGRAM 1

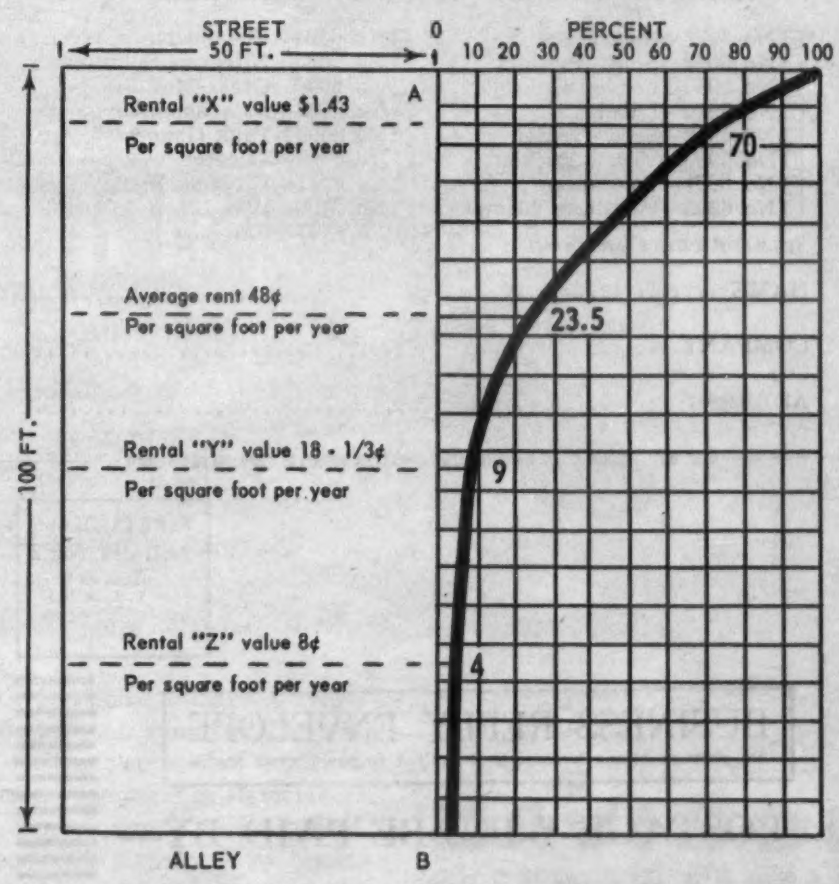
4 - 3 - 2 - 1 RULE



THE RENT contracted by lease is $2,400 per year. Therefore 5,000 square feet divided into $2,400 = 48¢ per year. This is the average rent per square foot per year for the whole store. Under the 4-3-2-1 rule, 40% of the total rent is assigned to the front ¼ of the space; 30% of the total rent is assigned to the second ¼ of the space; 20% of the total rent is assigned to the third ¼ of the space, and 10% is assigned to the rear ¼ of the space. Typical rent or occupancy cost for a drug store is 5% of sales; so that $2,400 = 5% of sales, and 1% = $480, and 100% = $48,000 total sales.

DIAGRAM 2

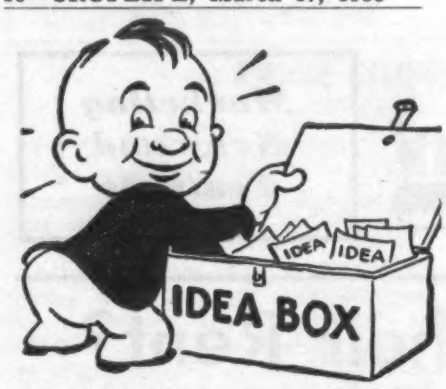
DIAGRAM OF RENT CALCULATIONS BY MEANS OF (r) FACTOR CURVE
CENTER OF CITY BLOCK LOCATION. SPACE ANALYSIS
USING .80 AS THE COMPUTED RATE OF VALUE DECLINE.



AVERAGE RENT of 5,000 sq. ft. at $2,400 per year contractual rent equals 2,400 ÷ 5,000 or 48¢ per square foot per year. Value of curve is read at each of the 21 horizontal subdivisions from A to B. Sum of all these values (493.5) is divided by the total number of readings (21) to yield average curve value (23.5). Line drawn from 23.5 point on curve to floor plan of store shows location of average rent of 48¢ per square foot per year.

Summary

One of the major items of expense in retailing is rent. Rent may be thought of as a percentage of the sales produced in the space occupied. Whether or not that space is owned by the merchant or leased, the cost of occupancy must be paid out of gross margins resulting from sales. In fact, lease contracts are often based upon a percentage of sales: as sales increase so does rent; likewise, when sales decrease rent also goes down unless some sort of minimum-fixed-rental arrangement is used. The growth of such percentage leases emphasizes the close relationship between sales and rent. Also it underscores the need for a closer examination of the influence of occupancy costs on store layout. This article is adapted from material prepared by the Small Business Administration, Washington.



What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 5942—Silage Product Folder

A folder about "Spring Pasture," a product said to make silage "more appetizing and nutritious" and which "deodorizes grass silage" has been prepared by the Kalo Co. The product supplies an antioxidant to inhibit oxidation. Suggestions for use with grass, corn, sorghum and other silage, with poor quality roughage or in feeds are included in the folder. Secure the folder by checking No. 5942 on the coupon and mailing it to this publication. Please print or type name and address.

No. 6706—Wax Lined Cans

Metal cans with a sanitary, odorless and tasteless wax lining that resists corrosion have been developed by George D. Ellis & Sons, Inc. The coating of 100% hydrocarbon, microcrystalline, petroleum or other types of waxes hot-sprayed into the finished can by an exclusive Ellisco process may be applied to any size or shape can which has an opening of ⅜ in. or larger. Secure details by checking No. 6706 on the coupon and mailing it to Croplife. Please print name and address.

No. 6707—Plastic Solenoid Valves

The "SV-5100" series of all-plastic, corrosion-resistant solenoid valves has been announced by the Valcor Engineering Corp. The valves are recommended for handling non-oxidizing and oxidizing chlorides, sulphuric acid salts, phosphoric acids, sodium phosphates and hydrochloric acids. Secure detailed information by checking No. 6707 on the coupon and mailing it to Croplife. Please print name and address.

No. 5970—Methoxychlor Specimen Label

A specimen label for "Marlate 50," the 50% technical methoxychlor insecticide wettable powder manufactured by E. I. du Pont de Nemours & Co. is available. Methoxychlor can be used for direct application to dairy cattle as a dust and as a spray in dairy buildings, the Food & Drug Administration ruled recently. Methoxychlor is no longer recommended for direct application to dairy animals by spray or dip. The specimen label has been brought up-to-date in accordance with recent rulings by FDA. Secure the label by checking No. 5970 on the coupon and mailing it to this publication.

No. 5989—V-Belt Booklet

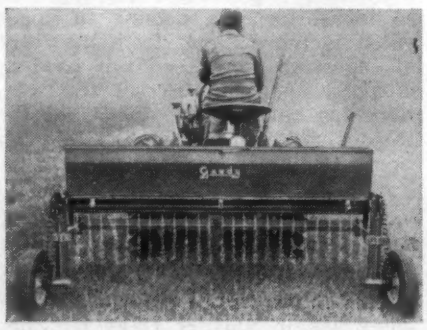
A 16-page booklet entitled, "V-Belts, the Testing, Inspection and Control of Their Quality," has been issued by the Goodyear Tire & Rubber Co. The booklet describes in words and with pictures how raw materials and finished belts are tested and inspected. One section of the book explains quality control procedures, another is concerned with experimental production. Check No. 5989 on the coupon and mail it to secure the booklet.

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 6698—Applicator Attachment

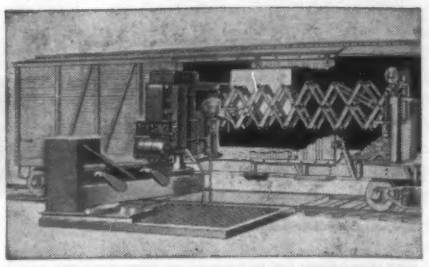
A new multi-purpose fertilizer spreader or applicator attachment for use on tractor tool bars has been introduced by the E. S. Gandrud Co.



Called the "Gandy Spred-N-Till," the new attachment is said to perform a number of field operations—broadcast or drill small grains and seeds; broadcast, drill, band, sidedress or deep-place fertilizer or granular chemicals such as insecticides. For broadcast applications the unit handles materials at the rate of 2 lb. to 4,000 lb. per acre. The applicator comes in 6-ft. and 8-ft. widths. Details may be secured by checking No. 6698 on the coupon and mailing it to Croplife.

No. 5966—Boxcar Unloader

Details of the hydraulically-operated boxcar unloader manufactured by Stephens-Adamson Manufacturing Co. have been announced. Company officials say that the unit can unload granular, pulverized or any free-flowing materials from large boxcars in less than 30 minutes. Features are: One-man operation; hydraulically-actuated boom swivel and scoop actions; positive digging and raking actions; and operator is located on an operation platform outside the



car. The boom and scoop can be set into automatic operation but the operator can stop the cycle at any time to redirect the boom. Further information may be obtained by checking No. 5966 on the coupon and mailing it to this publication.

No. 6699—Tank Gauges

A two-page bulletin issued by the Jordan Industrial Sales Division of the OPW Corp. describes the "OPW-Jordan" direct reading tank gauges. The gauges are recommended for liquid storage tanks up to 40 ft. in height. The bulletin describes features of the gauges and material specifications. Check No. 6699 on the coupon and mail it to Croplife to secure details. Please print or type name and address.

No. 6693—Liquid Fertilizer Clamps

Tiura Manufacturing & Sales has available a line of liquid fertilizer applicator clamps and shanks for distribution in the western slope area of the U.S. The products are intended for commercial applicators to buy, use and introduce to their customers. The clamps are available in several styles and sizes to fit standard or rounded shanks. They will fit 2-in. by 2¼-in. by 2½-in. square tool bars. The Tiura line includes the standard shank, the "Turk" shank and the "A-10" for specialized application. Secure details by checking No. 6693 on the coupon and mailing it to Croplife.

No. 6691—Diazinon Residue Tolerances

Geigy Agricultural Chemicals, Division of Geigy Chemical Corporation, announces that Diazinon residue tolerances of 0.75 ppm have been established for tomatoes, cabbage, cauliflower and broccoli. Growers may now apply Diazinon sprays or dusts to control aphids, leafminers and vinegar flies (Drosophila) on tomatoes; aphids, diamondback moths and imported cabbage worms on cabbage, cauliflower and broccoli. Details may be secured by checking No. 6691 on the coupon and mailing it to Croplife.

No. 6701—Labeling Book

The Manufacturing Chemists Assn. has published proceedings of its 1957 Conference on Precautionary Labeling and is selling it from its office at 1625 Eye St., N.W., Washington 6, D.C. The 52-page book includes complete papers presented at the conference and a list of the 225 government, industry and publications representatives who attended. Please write directly to the Washington address for price information.

No. 5923—Bulk Scale

The newest addition to the materials-handling line of the Burrows Equipment Co. is a 1,000-lb. model 1200 bulk scale. Company officials said the "heavy-duty scale features a built-in Fairbanks-Morse scale to weigh any lot of material down to the ounce, accurately and quickly as it is handled." The unit is 38 in. high and 30 in. wide, and has a hopper 40 in. in length. All controls—two-wheel foot-brake, scale, dump handle and pushing handle—are located at the rear, within easy reach of the operator. Standard equipment includes 10 in. rubber wheels at the

Send me information on the items marked:

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☐ No. 5970—Label	☐ No. 6698—Attachment
☐ No. 5978—Seed Treater	☐ No. 6699—Tank Gauges
☐ No. 5989—V-Belt Booklet	☐ No. 6700—Selector
☐ No. 6691—Tolerances	☐ No. 6701—Labeling Book
☐ No. 6693—Fertilizer Clamps	☐ No. 6706—Wax Liner
	☐ No. 6707—Valves

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front and 6 in. roller bearing swivel casters at the rear. Details may be secured by checking No. 5923 on the coupon and mailing it to this publication.

No. 6696—Grass Seed Mat

A new method to build a lawn will be introduced in 10 states this spring. The method consists of unrolling a carpet of grass seed on the soil, and watering it. Minnesota Mining & Manufacturing Co. has developed the product, which is a thin mat of green fibers containing grass seed. The mat clings to the ground, preventing the seed from being washed or blown away, preventing soil erosion, and retarding weeds, it is claimed. The mat disappears from view as the grass grows. The seed, blended for each climate, is imbedded evenly throughout the mat to assure uniform grass growth. Called "3M" brand grass mat, it will first be introduced in March and April in parts of New York, New Jersey, Connecticut, Michigan, Wisconsin, Minnesota, Iowa, Indiana, Illinois and Ohio. Secure details by checking No. 6696 on the coupon and mailing it to Croplife.

No. 6700—Electric Selector

The H. D. Hudson Manufacturing Co. has developed an electric sprayer and duster selector to determine the recommended sprayer or duster to use on a job. Hudson dealers can lo-

cate on the board the particular job to be done and insert a pointer into the proper hole. A light flashes alongside of the printed recommendation of a sprayer or duster. Check No. 6700 on the coupon to secure details. Please print or type name and address.

No. 6694—Research Chemicals Booklet

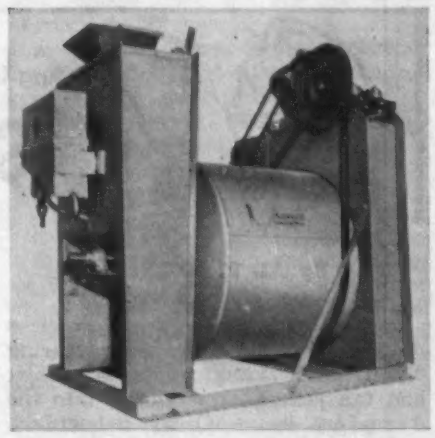
"Research Chemicals from Dow," a new 40-page booklet, lists some 160 chemicals available in sample quantities from the Dow Chemical Co., Technical Service & Development. A substantial portion of the chemicals listed are being offered for the first time. The booklet is the first comprehensive listing for general distribution of products that are of interest to research personnel and available for sampling. Chemicals described are inorganics, saturated and unsaturated aliphatics, aromatics and heterocyclics. Each listing includes the chemical's name, formula, physical description, some typical properties and sample size available. Check No. 6694 on the coupon and mail it to Croplife to secure the booklet.

No. 6695—Booklet on Nitrogen Solutions

A technical booklet on nitrogen solutions for fertilizer manufacture has been published for the fertilizer industry by the Sohio Chemical Co. The booklet, written by Sohio's technical service department, is a reference handbook for fertilizer manufacturers. Designed for day-to-day use in plant operations, the booklet contains a 16-page section discussing manufacturing with nitrogen solutions, plus basic information on various nitrogen solutions. A section discussing fertilizer manufacture provides information in selecting solutions, along with a review of such topics as: Uniformity of ammoniation and absorption, reversion, temperature, alkalinity and acidity, hygroscopicity and solubility, and the use of urea and other specific materials. Other sections discuss granulation versus conventional mixing, considerations and calculations in formulation, and plant and personnel safety. The last section of the plastic-bound booklet includes product information sheets on various nitrogen solutions used in fertilizer manufacture, as well as aqua and anhydrous ammonia. Individual product information sheets as released by Sohio may be added to the booklet to keep product information up to date. Check No. 6695 on the coupon and mail it to Croplife to secure the booklet.

No. 5978—Seed Treater

A new automatic liquid seed treater which will treat 350 bu. of seed per hour has been announced by the Panogen Co. Designated the Model LC, the new treater is of the same basic design as the larger automatic treaters. It employs the same principle of weighing and metering the seed; the same principle of tumble-mixing in a rotating drum until seed is uniformly treated, and the same automatic clean-out to the last kernel, company officials state. Once



lines are attached to the shipping container of liquid seed disinfectant, treating can proceed all day long without stopping machine. No mixing or handling of chemical is required. The treater is shipped complete with ½ h.p. single phase motor and built-in exhaust fan for removal of chaff, seed dust, etc.

Doing Business With

Oscar & Pat

By AL P. NELSON
Croplife Special Writer

A tall, thin faced farmer, with a day's growth of beard and wearing "high water" khaki pants, blue shirt and tan jacket, came slowly into the display room. Oscar Schoenfeld, pudgy, rotund and pot bellied, recognized the man as Earl Sherman, a farmer who still owed the firm about $75 on last year's fertilizer bill.

Oscar had kept after Pat for months trying to get him to collect that bill, but Pat kept telling him the man had no spare money, had much sickness in the family and other troubles.

"Is Pat around?" Sherman asked, standing at the railing that divided the office from the big display room.

Oscar frowned. "No, he is out somewhere. He spendts a lot of time just chasing aroundt. He shouldt be in here, like I am."

"I got them signs he ordered," said Sherman. "Where do you want to put them?"

"Signs!" exclaimed Oscar. "In these times he orders signs yet. Ach, what a man!"

"I got 25 of 'em," Sherman said. "Pat said he wanted 'em quick."

"I don't care what Pat wants. I don't want anything more that costs money to promote more business."

Earl Sherman looked crestfallen. "They're dandy signs. I'll get one and show it to you." And he turned toward the door.

Oscar chewed his lip. He was having trouble getting Tillie Mason to come back to work as bookkeeper and stenographer. She wanted $5 more per week to "stand the stress and strain" as she put it. The replacement Oscar had hired had been fired; she had been a complete flop, even deposited the firm's money in the wrong bank. And Pat had been talking about spending more money. "When sales are slow you gotta promote," he kept saying.

"Troubles, ach!" Oscar mumbled. "Why can't all people have sense like me and cut down?"

Earl Sherman came back with a wooden sign about 18 in. high and 3 ft. long. Black copy on a white background said, "We Test Your Soil Free . . . Oscar and Pat."

"Looks nice, eh?" Sherman asked hopefully.

"Free!" Oscar growled. "That Irisher is always giving something away. Why can't we sell something aroundt here for full price once in a while? Why give yourself into bankruptcy? How much is he going to pay you for that?"

"Well, he made me a proposition to make these signs for the money I owe you fellows," Sherman said. "I had the spare lumber and I got a good workshop. Made these signs nights. Sure glad to get that bill paid, too. Nice of Pat to suggest it."

"Cash would be better!" Oscar burst forth. "If we settle all bills like that we will soon be kaput. Now that Irisher will want to put those signs on highways. We will haf to spendt a lot of money for that. That Pat—I'll bet he never thought of that."

'I sure have thought of it!" Pat had stepped in from the warehouse and heard this remark. "Hello, Earl. Say, those signs look mighty good. If we have any other work like that I'll sure keep you in mind."

The thin faced farmer smiled. "Thanks, Pat. I sure can use some extra work like this nights. I've got a lot of sickness bills to pay."

"Oscar, will you make a receipt for that $75 Earl owes us?" Pat said, inspecting the signs again. "These 25 signs will work out fine for our spring campaign."

Oscar Schoenfeld stiffened, then got to his feet. "You make the receipt," he said. "Ach, you made the deal and you finish it." And with that Oscar walked into the warehouse.

Pat smiled slightly and sat down and began writing a receipt. "Oscar must have eaten too much sauerkraut last night," he explained. "It makes him owlly once in a while."

"From what I hear," Sherman said slowly, "he must be eating too much sauerkraut every day. He's this way all the time."

After Sherman had gone, Oscar came back into the office. "Well," he said, "are we going to burn the signs for firewood? We can't affordt to pay farmers to put up the signs? And why give soil tests free?"

Pat McGillicuddy sighed, ran his hand over his high forehead. "Oscar," he said patiently, "you remind me of my mother-in-law. She's got a German streak in her. If she buys a bag of potatoes, she always expects to find the bottom half of the bag filled with runty spuds. Why always look at the dark side?"

"The dark side is better than the red side on our books!" Oscar snapped. "It's too late for soil test signs. We won't get any business on those now."

"We will," Pat said. "Every other fertilizer dealer in the country is advertising how good his fertilizer is. We've gotta be different—then we catch attention. We've been advertising fertilizer in newspapers for weeks. Now let's advertise soil tests. It'll get farmers thinkin' of us, instead of the other fellow."

"It will cost too much," Oscar said. "$75 for the signs and five times that to get the signs put up."

Pat shook his head. "No, Oscar, I've got the farmers already lined up. I'm going to help those 25 farmers take soil samples between now and fall and give each one a free bottle of cattle spray. In return they are going to let me post those signs on their fence posts free."

"But your time and the cattle spray cost us money!"

"Now, yes, but when I visit those farmers, you watch the amount of fertilizer, spray materials, and poultry and livestock remedies I'll sell before I get through. We'll make a handsome profit."

Oscar slapped his hand to his sweating forehead. "Ach, how you Irishers do business! I can't figure it oudt. You are crazy! McGillicuddy, you should work for the government. Then you could spendt as much as you want every day and never worry about making a profit. I feel sick. I must take a liver pill. Himmel, why did I ever go into business with you!"

ILLINOIS HUDDLES—Above are scenes from the recent Illinois Fertilizer Industry Conference. In the top photo, from left to right, are Stanley Smith, Darling & Co., Chicago; M. B. Russell, University of Illinois; W. W. Wilson, U.S. Potash Co., Wheaton; and Robert G. Fitzgerald, Smith-Douglass Co., Streator, Ill. Below are R. P. Thomas, International Minerals & Chemical Corp., Chicago, Murry C. McJunkin, U.S. Steel Co., Pittsburgh, and Sam Aldrich, University of Illinois soils specialist.

SHOP TALK

OVER THE COUNTER

By Emmet J. Hoffman
Croplife Marketing Editor

The "rocket age of selling" has arrived. This opinion was expressed by one speaker at a recent meeting of agricultural suppliers.

"Salesmen hold the key to the future of a business," the speaker said. "The greatest challenge we face today is simply to sell the products that are produced."

In meeting the challenge the seller has to make big plans, aim high and hope and work, he said.

Comparing the sales problem with a guided missile, the speaker made these observations:

The head of the missile contains the payload. This is the salesman who sees to it that there are customers for manufactured products. Behind the nose cone is the guidance mechanism or sales management. The relay systems of messages, facts, programs, selling presentations are of vital necessity for the proper functioning of the salesmen.

"Remembering that we are living in a world of constant change," he continued, "we cannot rely on methods that proved successful even five years ago. Are you changing with the times?"

Back of the guidance system is the fuel. The salesmen must be supplied with all necessary facts and data.

Behind the fuel is the thrust unit to get the missile started. In a sales program, this is called sales motivation. It is concerned with the material and psychological wants of salesmen and must become the basis of practical and inspired leadership.

"You can buy a salesman's time, but you cannot buy his enthusiasm, his loyalty and his devotion of heart, mind and soul." An incentive plan is an important part of the motivation, and it must be backed up by fair play, praise and confidence from management, the speaker said.

Another speaker called communications the most important word in the vocabulary of U.S. business.

Imperfect use of communications can build road blocks of needless mistakes and blunders in what otherwise might have been successful programming. On the other hand, communications provides the cohesive force which is so necessary in achieving a concerted, coordinated effort in any enterprise.

"Excellence in the art of communications systematically lowers operating costs, increases sales volume and brings to each company added measure of distinction in prestige and performance," he continued.

The speaker offered this guide to improved communications in the form of a "challenge": To think before you speak, act or write; to communicate neither too much nor too little; to achieve a perfect sense of communications timing; to vividly "sell" each communication; to select the correct word or phrase; to employ each word correctly; to break your own record in clarity of expression; to strive for absolute perfection with each message; to rise above the babble of the crowd in articulation; to seek always to understand as well as to be understood; to be ethical to the letter in all communications; to master the time-honored virtue of simplicity; to speak with God-given honesty and sincerity.

New England News Notes

By GUY LIVINGSTON
Croplife Special Correspondent

Two insecticide curbs are being weighed in Massachusetts. One proposal involves creation of a central clearing point for all insecticide programs in the state with the exception of routine farm spraying by farmers. The other centers on a campaign for effective research on the effects of insecticides on both wildlife and mosquitoes.

Warren G. Harding, Plymouth County Mosquito Control superintendent, is proposing the first plan. His proposal would eliminate many of the duplicate sprayings that now occur which, he points out, increase the danger to wildlife without improving insect control. It would also keep records on the amount of insecticide dumped on any area over the years, trying to hold it within safe limits. To make the proposal effective legislation similar to the 1957 Connecticut aerial spraying law would be required.

"It is time for conservationists to establish an offensive and present a positive program for endangered wetlands," says Raymond Spinner, U.S. Fish & Wildlife Service.

Mr. Spinner's program for mosquito control employs fish, predatory insects, certain aquatic plants and calls for an investigation of many New England ponds that for some reason not now known never produce any mosquitoes.

In addition, at the Massachusetts Audubon Society, director William H. Drury, Jr., is experimenting with the mosquito fish, gamusia, a top water minnow, that gobbles up mosquito larvae.

Mosquito control men say that they are blamed too often for "spraying that someone else ordered." One of the mosquito control superintendents reported that one of his helicopters started to spray the trees of a village for gypsy moth and was almost hit by another plane that loomed over the horizon to spray the same trees at the same instant for mosquitoes.

In Massachusetts now, it was pointed out, in addition to mosquito control spraying, some towns send out public works department men to give trouble spots another dose. In some cases, the tree warden comes along and treats elm bark beetles. Then a state gypsy moth plane works over the area. Along with it all, householders and farmers are giving crops a dusting or spraying, all adding up to a sizeable amount of insecticide, it is claimed.

Mosquito Group Meets

The operators were told of progress in the use of insecticides at the fourth annual meeting of the Northeastern Mosquito Control Assn. at the University of Massachusetts Waltham Field Station at which Lewis F. Wells, Jr., Quincy, superintendent of the South Shore Mosquito Control Project, was reelected president.

Discussions at the meeting centered around such topics as new insecticides in mosquito and biting fly control, cooperative water management to conserve wildlife and control mosquito breeding, and informing the public as to mosquito control problems and methods. Speakers stressed that prevention of mosquito breeding by drainage, other water level management, and insecticide treatments to standing water to kill young stages, is basic to all other control measures.

Springtails Numerous

Tiny, jumping insects reported by people all over Massachusetts, are not really fleas—they are springtails, Dr. Ellsworth H. Wheeler, extension entomologist, University of Massachusetts, who was asked to investigate, reported. They do no damage to living plants and animals or to property but may become so abundant around homes as to create a nuisance, he said. In this case, spraying or dusting with lindane or malathion should alleviate the nuisance.

The springtail or "snow-flea" become so abundant on snow in winter as to cause it to appear blackened or reddened. While the springtails being seen now do no damage, a tiny black relative does appear in gardens in late April and in May to feed on seedlings. It can be killed with malathion, the entomologist said. The long tailed silver fish found scurrying about warm buildings also belongs to the same group of insect life.

Conversion to Wildlife

The Soil Conservation Service is encouraging Massachusetts farmers to convert marginal cropland acres to wildlife use under the soil bank program. "The production of wildlife commands exactly the same return in annual rental as grassland or woodland," said Dr. Benjamin Isgur, state conservationist for the SCS. "So for once the argument that farmers cannot afford to use their land for wildlife does not hold. In addition, farmers may harvest or sell their wildlife crop during the contract term, a privilege that does not apply to grass or trees under normal conditions. In 1956, more than 2,000 acres in the state were improved for wildlife."

Apples to Europe

For the first time since the end of World War II, important quantities of Massachusetts apples, most of them Baldwins and Delicious, are being shipped to European markets.

One big Ayer shipper estimates that perhaps as many as 100,000 bushels will have been shipped out of Boston and New York by late March. The export apples are generally destined for England, Holland, West Germany, Belgium, Sweden or Norway, where they sell for the equivalent of 25¢ pound. Before World War II, the export trade accounted for from 15 to 20% of the U.S. apple crop. Now, even with today's stepped-up trade, exports will remove less than 2% of the U.S. apple crop.

Kentucky Sales

LEXINGTON, KY.—Kentucky fertilizer sales during the last six months of 1957 totaled 86,840 tons, a drop from 90,284 tons in the last half of 1956. The total for the 1957 period included 62,850 tons of mixed goods and 23,990 tons of materials.

OREGON APPOINTMENT

SALEM, ORE.—The Oregon Department of Agriculture announces the addition of Harold Foster to its staff as an assistant entomologist who will work on Oregon's plant pest and disease survey program. Mr. Foster, a former Nebraska county agent, obtained his bachelor of science degree at the University of Nebraska.

FARM SERVICE DATA

Extension Station Reports

Annual fertilization of apple trees will help the orchardist produce large crops of high quality fruit year after year, says Dr. H. A. Rollins, Jr., associate horticulturist at Virginia Polytechnic Institute.

He says in Virginia nitrogen is the main material that must be applied for apple trees. A general rule of thumb is to apply ¼ lb. of a 20% nitrogen carrier for each year of age of the tree. For instance, a 20-year-old tree would receive about 5 lb. of a 20% nitrogen fertilizer.

However, this rule of thumb should be only a starting point. The fertilizer should be adjusted either up or down depending upon tree response. If the tree is pruned heavily the amount of fertilizer applied should be cut slightly. On the other hand, if the tree bore a heavy fruit crop last year and has been pruned only lightly, it would be best to increase the amount of nitrogen applied.

The fertilizer should be applied in early March so it will be available by the time the buds break. Some growers put on part of the fertilizer around Dec. 1, and then apply the rest in the spring. The fertilizer should be spread evenly to a doughnut-shaped area extending from the ends of the limbs to a couple of feet from the trunk of the tree. This area is where the small feeder roots are.

The cover crop should be fertilized only as the need arises. Legumes do best on such combinations as 0-14-14, 2-12-12, or 0-16-8. For non-legumes such combinations as 4-16-8, 5-10-10, or 10-10-10 are good. It is usually not necessary to fertilize the cover crop every year. When it shows need of fertilizer, February or early March are the best application times.

★

When is the best time to apply fertilizer to small grains, and what is the best way to apply it?

J. A. Lutz, assistant agronomist at the Virginia Agricultural Experiment Station, has some reports on VPI tests which may help to answer that question.

In one test, spring-seeded oats were fertilized with an equivalent of 200 pounds per acre of 20% superphosphate from a 10-20-20 fertilizer. Three different times and methods of application were tried: disked into the soil before seeding; drilled with the seed; and applied as topdressing just after seeding.

Oat forage yields at an early stage of growth were 567 lb. per acre when the fertilizer was disked in, 1,220 lb. per acre when drilled with the seed, and 479 lb. per acre when the phosphate was applied as topdressing.

At a later stage of growth, oat forage yields were 2,433 lb. per acre when the fertilizer was disked in, 2,909 lb. when drilled with the seed, and 1,106 lb. when applied as topdressing.

The same relationship between treatments was reflected in grain yields. Oat yields when the fertilizer was disked in were 53 bu. per acre, when drilled in were 60 bu. per acre, and when applied as topdressing were only 43 bu. per acre.

In another test with wheat, results again showed that forage yields from two clippings were highest when the fertilizer was drilled with the seed, next highest when all fertilizer was disked into the soil. Applying the fertilizer as topdresing just after seeding the wheat gave the lowest yields.

A new rooting compound has been found superior for some plant species to several commonly used materials in preliminary studies at the Rhode Island Agricultural Experiment Station. Called Chloromone, it is a compound containing natural plant hormones—auxins A and B.

Horticulturist V. G. Shutak emphasizes that the results are preliminary in nature and that more research is needed to evaluate the compound.

However, it appears to do a better job of promoting root growth in cuttings than materials containing naphthalene acetic acid (NAA) and 3-indolebutyric acid (IBA). Chloromone gave excellent results with grapes, carnations and Japanese yew.

In the tests with Japanese yew, cuttings were taken in late October. The basal ends were dipped in the test compound and the excess tapped off. Twenty-five cuttings of each treatment, plus a check group, were placed in a propagating medium made from half coarse sand and half peat moss. Temperature was maintained at 70 to 75° F. and relative humidity at approximately 80%.

Chloromone gave excellent results. An evaluation index was used of 2 for callused, 3 for rooted, and 4 for well-developed roots. The Chloromone treated cuttings scored a total of 92, those treated with 3-indolebutyric acid scored 60, and the check cuttings scored 50.

★

Nitrogen content of the fertilizer needed for tobacco following lespedeza seems to be determined largely by the denseness and amount of growth of the lespedeza stand, results to date at Virginia Polytechnic Institute Agricultural Experiment Station have shown.

Tobacco following a good stand and growth of lespedeza will need only 10 to 20 lb. of nitrogen per acre, while tobacco following a poor stand and growth of lespedeza will need 30 lb. of nitrogen per acre.

Nitrogen needs for tobacco in a three-year rotation (in which tobacco follows corn planted after lespedeza) appear to be 30 to 35 lb. per acre for best results. Increases in potash above 80 lb. per acre as K_2O showed no significant acre-value increases in either rotation.

Root-rot troubles were more noticeable in the two-year rotation than in the three-year rotation. There was no evidence that any particular nitrogen or potash rate favored the incidence of root-rot or meadow nematodes.

In the three-year rotation, Dixie Bright 244 produced significantly better acre-value returns than Vesta 5, while Vesta 5 gave much better returns than Dixie Bright 101. This was generally true, no matter what nitrogen and potash rates were used, thus showing that tolerance to root-rot and meadow nematode of these blackshank resistant varieties is in the order named.

The test began in 1953 at plots near Chatham, and aimed at: (1) determining the effects of several fertilizers varying in nitrogen and potash content on yield, quality, and acre-value of flue-cured tobacco when grown in two- and three-year rotations including lespedeza; and (2) studying the incidence and effects of such diseases as black root-rot and meadow nematode on the tobacco crop produced with each fertilizer treatment and rotation.

PAYING THE RENT

(Continued from page 9)

to provide figures on the amount of space certain goods should occupy. Suppose, for example, that the store illustrated is a drugstore, and that a tobacco department location is at the left inside the front entrance. How much space should be allotted to it?

Tobacco sales last year totaled, say, $8,640. A sales rate of $30 per square foot per year was reported by National Association of Retail Druggists in studies for this size store. Thus $8,640 ÷ $30 will indicate the space which should be needed to produce this sales volume: 288 sq. ft. Note that space is computed to the center of the aisle serving the department.

A 6-ft. aisle serves the department, and hence, 3 ft. of aisle space must be paid for. Then there is a case containing some of the stock which is 24 in. wide. To this must be added a 2-ft. aisle for clerks, and an 18-in. wall case. The total is 8½ ft. Thus, 288 square feet divided by 8.5 gives a front dimension for the department of 34 feet.

Occupancy in this case costs 5% of sales, and therefore, the amount of rent allowable for this department will be $8,640 x 5% or $4.32. Then, if 288 square feet is divided into the allowable rent, the rate per square foot per year can be calculated: 432 ÷ 288 = $1.50 per square foot per year which can be paid for space to accommodate this department. At this point, the (r) Factor Curve can provide the means of locating an area that has a value of $1.50 per square foot per year—in the neighborhood of the $1.43 line on diagram 2.

If this tobacco department actually filled 500 sq. ft., then the sales rate would be only $17.28 per square foot per year. This would be far below the association's standard figure of $30. Moreover, the occupancy cost of 5% of the $8,640 sales was only $432 per year. To occupy 500 square feet of space worth $1.50 per square foot per year would cost $750, almost twice what is reasonable on that sales volume.

Such calculations provide a useful way of making sure that your merchandise lines are paying their rent. It is worthwhile to review your own operations periodically to see that the goods are arranged so as to support the value of the space they occupy.

FOR FURTHER INFORMATION: Businessmen wishing to explore further the subject of retail store layout may wish to consult such organizations as the National Retail Dry Goods Association, 100 W. 31st Street, New York 1, New York; National Association of Retail Druggists, 205 W. Wacker Drive, Chicago 6, Illinois; American Marketing Association, 27 E. Monroe Street, Chicago 3, Illinois; or the Association of Consulting Management Engineers, 347 Madison Avenue, New York 17, New York. Such groups can often supply the names of specialists who can provide technical assistance.

For additional reading, the following selected books contain material on layout. They are representative of other good volumes which the present format precludes mentioning. No slight is intended toward authors whose works are not included.

Principles of Retailing by C. W. Barker and I. D. Anderson. McGraw-Hill Book Company, 330 W. 42nd Street, New York 36, New York. 1941. $5.50.

How to Establish and Operate a Retail Store by O. P. Robinson and K. B. Haas. Prentice-Hall, Inc., Englewood Cliffs, New Jersey. 1952. $5.00.

Store Organization and Operation, 2nd Edition, by O. P. Robinson, J. G. Robinson, and M. Matthews. Prentice-Hall, Inc., Englewood Cliffs, New Jersey. 1957. $6.75.

Retailing: Principles and Methods, by D. J. Duncan and Charles F. Phillips. Richard D. Irwin, Inc., 1818 Ridge Road, Homewood, Illinois. 1955. $7.20.

Vermont Dairyman Tops New England Green Pastures Program

BOSTON—Top quality forage linked with high milk production per cow and per man brought success to Donald E. Lewis, Woodstock, Vt., dairyman, in the first New England Green Pastures-in-Winter program.

Mr. Lewis was named program winner after a 2,000-mile winterized tour of the six-state area by the regional judging committee composed of farmers and agriculturists.

Eighteen farms, three from each state, vied for honors. Forage production and storage programs, barn feeding methods and management came under scrutiny of the judges.

Second place in the competition went to Francis E. Plumb of Walpole, N.H. Third was the farm of Joseph A. and Antonio J. Malnati, Ashley Falls, Mass.

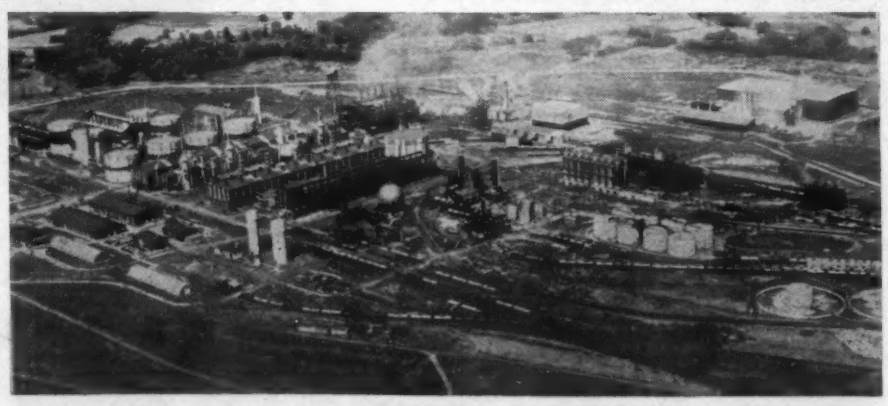
The winter program replaces in 1958 the traditional spring-summer Green Pastures program which has been carried on in New England for the past 10 years. This year emphasis was placed on improving quality and quantity of forage fed during the barn feeding period.

Freeport Director

NEW YORK — Augustus C. Long, chairman of the board of directors and chief executive officer of the Texas Co., has been elected a member of the board of directors of Freeport Sulphur Co., Langbourne M. Williams, president, has announced.

GRASSLAND DAY SEPT. 4

NEW BRUNSWICK, N.J. — The Agricultural Experiment Station at Rutgers University has set Sept. 4 as the date of its Grassland Field Day at the Dairy Research Farm in Beemerville.



MORE UREA—Revamping at the South Point, Ohio, plant of Nitrogen Division, Allied Chemical & Dye Corp., will boost urea capacity from 80,000 to 110,000 tons a year. When work is completed, the division's total urea capacity will be 220,000 tons a year.

What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

The value of insecticides and fertilizer materials in the production of cotton were emphasized at the Western Cotton Production Conference held at El Paso, Texas, March 4-5. More than 500 persons were in attendance.

Fertilizer dealers in Montana met at Montana State College to attend a convention sponsored by the Montana Plant Food Assn. Speakers, representing the fertilizer industry and Montana State College, urged the dealers to learn more about their products in order to give farmers more service and information.

The State of California amended its regulations governing use of 2,4-D to exempt from the permit requirements, two products: a wax block impregnated with 2,4-D for control of broad leaf weeds in grass, and the other a diluted solution in a quart container.

The possibility of an additional 30% of cotton acres for 1958 was seen in recommendations coming from the Senate. The agriculture committee planned to ask a suspension of Senate rules to permit cotton farmers to increase their acreage allotments.

The Minnesota Nitrogen Conference, held at St. Paul Feb. 20-22 featured representatives of Upper Midwest land grant colleges, the fertilizer industry, and experiment station personnel on the program. The extent of a great untouched potential for nitrogen use was emphasized by the speakers.

Niagara Chemical Div., Food Machinery & Chemical Corp. announced it is building a new pesticide plant at Greenville, Miss. In charge of the operation, slated to begin production this spring, is Horace W. Lee.

The eleven-man committee making a study of TVA fertilizer activities will continue to offer recommendations and suggestions to the agency for the long run. Its chairman, Dr. Earl O. Heady, Iowa State College, said members of the committee were presently making individual recommendations to TVA, but that the committee would operate as a unit later.

Soil bank policies for 1958, so far as the fertilizer and pesticide industries are concerned, presented a puzzling picture as Congress debated the political angles involved in the matter. No adequate answer to how the law might affect the industry appeared to be forthcoming immediately.

Final results of a survey made for the National Plant Food Institute by National Analysts, Inc., gave an enlightening insight on how farmers regard fertilizers. Soil tests, demonstrations rate high in helping the purchaser to make up his mind on what to buy, the survey indicated. The survey also indicated a need for education of the farmer on even the basic facts of what the grade numbers mean in terms of soil needs.

Paul Gregg, San Antonio, Texas, was named chairman of the Southwestern Branch of the Entomological Society of America at the group's meeting at Houston. He succeeded C. R. Parencia, USDA, Waco, Texas.

Dr. George C. Schweiker was named to the new position of manager of research for Velsicol Chemical Corp., Chicago.

Delhi-Taylor Oil Corp. announced that it will develop plans for a $20 million potash mine and mill in eastern Utah.

Planters Chemical Corp. announced that it is building a new dust blending operation at Fayetteville, N.C. for insecticides, fungicides and weed killers. The new unit was scheduled for opening in April.

Russell B. Stoddard, Fairfield Chemical Div. of Food Machinery and Chemical Corp., New York, retired after many years in the pesticide field. He said he would remain as a consultant for the firm, however.

The Western Cooperative Spray Project Conference was held at Portland, Ore., as was the fifth annual Northwest Agricultural Chemicals Industry Conference. Speakers emphasized the high cost of research that must be part of developing a chemical for agricultural use.

The annual pesticide school at North Carolina State College, held in January, heard talks on insect control problems, and a plea for closer cooperation between colleges and the pesticide industry.

Sinking of a potash mine shaft in nine months set a record when the Farm Chemical Resources Development Corporation's new mine was sunk in New Mexico. The shaft's maximum depth was 1,697 feet.

A new fertilizer firm, Basic G Industries, Inc., started operations at Houston. Plant capacity is 60,000 tons a year. The output will be distributed through 150 dealers.

The American Medical Assn. proposed a new model law covering labeling of "dangerous" chemicals. The proposal was a start toward uniformity in all states.

"Pest-O-Rama," a two-day pesticide conference at Montgomery, Ala., attracted thousands of people from the state to see exhibits, listen to talks by entomologists and others in the insecticide trade, and to learn more facts about the importance of pest control.

The Weed Society of America in its January meeting at Memphis, reported that weeds cost the American economy some $5 billion annually. Some 35 million acres were sprayed for weed control during 1957, the convention was told. Of this total, some 12 million acres were in corn. Dr. A. S. Crafts, University of California, Davis, was named president of the National group.

Iowa reported that only 7% of the farmers in that state applied insecticides to control corn borer, whereas 88% of the Iowa crop was infested with the insect. Another "severe" infestation was predicted for the 1958 season.

The value of early season control of cotton-infesting insects was stressed at the Mississippi Insect Control Conference held at State College, Miss.

A $200,000 superphosphate plant near Littlefield, Texas, was begun in January. It will be known as the Caprock Fertilizer Co., owned by Longhorn Construction Co., Sulphur Springs, Texas.

SERVICE TO CUSTOMERS — The above large-size pump on wheels is available without charge to customers of Faith & Woods, Inc., La Crosse, Ind. Roy Faith (right) explains its workings to a customer. The free use of the pump is a good fertilizer sales promoter, Mr. Faith says.

Arkansas Fertilizer Use Slips from Previous High

LITTLE ROCK, ARK.—Consumption of fertilizers in Arkansas during January, 1958, was considerably less than that of the same period of 1957, according to a report compiled by D. W. Glover, Arkansas State Plant Board. The grand total for January, 1958, was 8,456 tons as compared to 13,169 for January, 1957, the report says.

Fertilizer use in the state in the six-month period of July, 1957 through January, 1958 was also down somewhat. The total for this period of 1956-57 was 73,076, as compared to 71,208 tons recorded in the six-month period just past.

Of nitrogen materials, ammonium nitrate and nitrogen solutions were used in similar amounts, 1,334 and 1,313 tons, respectively. Anhydrous ammonia was used in the amount of 411 tons, and nitrate of soda, 430 tons.

The grade of 10-20-10 was used in greater quantity than any other, tallying some 798 tons. Right behind it, with 714 tons, however, was 5-10-5, and third, 10-20-20, with 246 tons.

Connecticut Fertilizer Sales Up in 1956-57

NEW HAVEN, CONN.—Mixed fertilizer sales in Connecticut between July 1, 1956 and June 30, 1957 totaled 61,208 tons. Fertilizer materials and special mixtures brought the total to 83,843 tons. This is an increase of 7,183 tons over the preceding year; a drop in fertilizer used on tobacco was more than offset by the tonnage used in establishing cover along the Connecticut Turnpike.

Among more than 70 grades of mixed fertilizer offered for sale, the grades 5-10-5, 5-10-10, 10-10-10, and 6-3-6 accounted for about 56% of the total tonnage. Seventy nine per cent of the mixed fertilizers sold were of the 10 ratios and minimum grades recommended by agronomists of southern New England.

TVA License

EAST GRAND FORKS, MINN.—Northland Chemical Co. here has obtained a royalty-free license from the Tennessee Valley Authority for use of the TVA process for ammoniation of superphosphate.

RUTGERS APPOINTMENT

NEW BRUNSWICK, N.J.—James B. Fawcett will become associate director of the Rutgers University Extension Service in Agriculture and Home Economics on July 1, according to Dr. Lewis Webster Jones, president. Mr. Fawcett, who is agricultural extension leader, will succeed Lindley G. Cook whose retirement becomes effective June 30.

WEED OF THE WEEK

Mr. Dealer—Cut out this page for your bulletin board

DODDER

How to Identify

When it becomes large enough to be noticeable, dodder is a slender, twining parasitic plant with long curling leafless stems. Color of the stems are usually yellowish or orange, but are sometimes tinged with red or purple and occasionally are almost white. The tiny flowers occur in massed clusters from early June until the time of frost. Small gray-to-reddish-brown seeds are produced abundantly, a single plant being capable of maturing upwards of three thousand. Seeds ripen from July until frost, but during occasional adverse seasons no flowers are formed.

Losses Caused by Dodder

This is a parasitic plant, infesting clover and alfalfa chiefly. However, a number of other cultivated crops are subject to infestation by dodder. The most important of these are sugar beets, onions and flax. Its appearance in the U.S. is noted in all regions in which clover and alfalfa are raised for seed. The USDA says that although dodder is a noxious weed, it is not to be feared in the U.S. to the degree that it has been in Europe. In the latter place, particularly in parts of Germany, production of clover seed is known to have been abandoned because of this parasitic plant.

Life History of Dodder

All dodders reproduce from seed. After germination, the seed uses up all its stored-up food in the production of the slender shoot. This leafless, nearly rootless stem rotates until it comes in contact with a congenial host, such as clover. (Some species may attack almost any plant growing in the field.) It leaves this temporary host as soon as it can climb within reaching distance of nearby clover or alfalfa. In case a suitable contact is not established, the temporary stem lies dormant on the soil for four or five weeks and then dies. When a suitable host is encountered, however, the dodder encircles it and obtains nutrition by sinking minute suckers into the food-conducting tissues of the host and stealing its food. The base of the dodder soon shrivels and dries, thus losing all connection with the ground. As the plant grows, it reaches for neighboring host plants and moves out in an ever-increasing circle of infestation. The clover plants first attacked die, as does the dodder feeding on them, but the parasite living on newly-attacked clover continues to live and to drop seed which soon germinates and continues the attack.

Control of Dodder

Chemicals may be used in controlling this parasitic weed, but local authorities should be consulted before any herbicide is applied on crops to be used for feed, forage, or for human consumption. Cultural means of control have been suggested by USDA, with different recommendations being made for various species of the weed. When fields become so infested that no other method of control is apparent, burning is said to kill not only the existing plants, but also seeds that are lying on the ground.

Illustration of Dodder furnished Croplife through courtesy of U.S. Department of Agriculture, Beltsville, Md.

Texas Aviation Conference Hears Pesticide Reports and Recommendations for Season

COLLEGE STATION, TEXAS—"Proper insecticides properly applied at the proper time do not cost—they pay," Dr. R. L. Hanna told approximately 350 participants in the seventh annual Texas Agricultural Aviation Conference and Pest Control Short Course held recently at Texas A&M College.

Dr. Hanna, a member of the college's entomology department, was a member of a five-man panel which opened the two-day business part of the meeting with a symposium on insect control.

"Carefully controlled experiments over a 10-year period at the Texas Agricultural Experiment Station have shown that sprays and dusts are equally effective when properly applied," Dr. Hanna said. "Sprays may be applied at higher wind velocities than dusts and are not as easily washed off. Tests have shown that emulsion sprays when allowed to dry on cotton plants are not completely washed off by a one-half inch rain, while dusts are removed by less. Dusts offer the possibility of greater acreages per plane-load by improving insecticide formulations and distribution.

"Low dosages of insecticides are recommended for the early-season control of such insects as thrips, fleahoppers and over-wintering boll weevils. These are calculated to reduce pest populations to a non-damaging level without destroying natural enemies or causing them to leave for lack of food. Boll weevils which have survived the winter and have moved back into cotton fields are much easier to kill than their offspring later in the season, and reduction of this over-wintering generation reduces the potential late season infestation. Control of insects such as thrips and fleahoppers insures early fruiting and maturity of the cotton, which is becoming increasingly important . . ."

Continuing on the subject of weevils, Dr. Hanna said, "Since boll weevils spend their larval lives within squares or bolls, and it has not proved practical as yet to kill them there, it is necessary to attack the adults by forcing them to move over and feed on plant surfaces covered with insecticides. To maintain this cover, insecticides must be applied at five-day intervals because of chemical breakdown and new plant growth. If a quick-acting, short-residual compound is used, a shorter interval will probably be necessary. This is especially true later in the season when weevils become restless and move from field to field rather rapidly."

Switching to other insects, Dr. Hanna said, "Timing of insecticide applications is probably the most important factor in bollworm control. There is a rather short period after hatching when the young larvae are feeding in the open when they can really be adequately controlled . . . A late application or a poorly executed one when a large number of worms are hatching can mean a considerable loss in bolls two weeks later, even if a regular five-day schedule is maintained.

"Pink bollworms are vulnerable to insecticides for an even shorter period than bollworms, since a large proportion of the eggs are laid directly on the fruit which the newly hatched larvae enter . . . An infestation of pink bollworms is cumulative, and unless numbers are reduced by efficient applications of insecticides, great losses in grade and yield may occur.

"Cotton leafworms (which cannot over-winter in the U.S.) are usually reported first from the Gulf Coastal Region of South Texas. The moths from this generation of worms fly northward. By the third generation, major portions of Texas, Arkansas, Louisiana and Mississippi may be infested.

"The disturbance of natural balance in our insect populations due to chemical control of our major pests, often results in serious infestations of aphids and mites. Insecticides in general use for boll weevil, bollworm and pink bollworm control are not always effective against aphids and mites. There are two general approaches to this problem. Small amounts of material effective for the control of mites and aphids may be added to all applications of insecticides for suppression of aphid and mite populations; or these populations may be allowed to build up to near-damaging infestations and then treated with a 'knock-out' dosage. If mite infestation becomes severe, extensive defoliation may result. Severe aphid infestations will result in a lowered grade of lint caused by a fungus which thrives on the 'honeydew' secreted by these insects.

"The application of insecticides when they are needed will result in considerable profits for the farmer. These applications should be scheduled to aid in maturing the bolls as early and as near the same time as possible. Any increase of the length of time from planting to harvest makes the period of insect protection longer and the applications more expensive. Late-harvested cotton is lower in grade and more difficulties are encountered in its harvest."

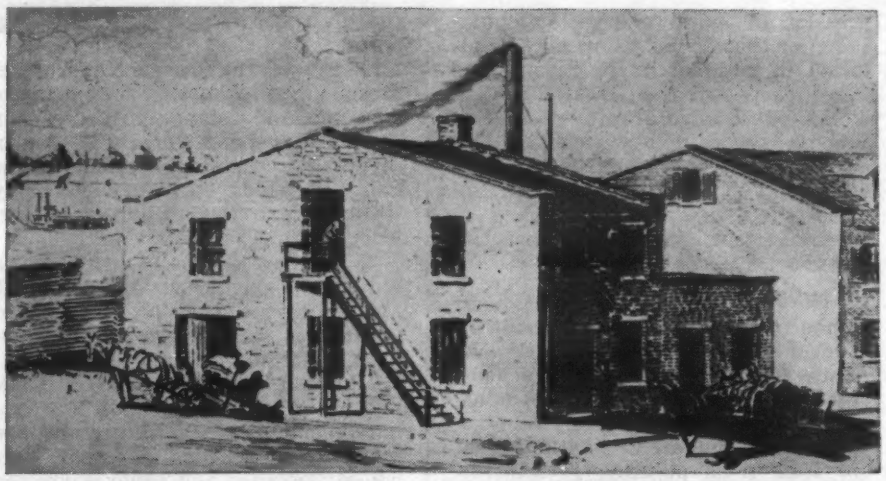
Prof. N. M. Randolph, also of the college's entomology department, spoke on insects which attack forage crops.

"Many of the insects that attack forage crops are not restricted to any one crop and consequently the same insects may be a general feeder on several host plants," he said. "Grasshoppers, aphids, cutworms and armyworms are a few examples of such insects . . .

". . . Most species of grasshoppers have only one generation annually and, as a rule, they pass the winter in the egg stage. Eggs are deposited during late summer and early fall on the ground along fences, creek banks and other protected places. The eggs hatch and the young grasshoppers move into nearby fields of corn, wheat, legumes and other early season crops . . . Dieldrin, aldrin, heptachlor and toxaphene, as sprays or dusts, are the most common insecticides recommended for the control of grasshoppers . . .

"Several species of aphids (plant lice) do considerable damage by suck-

(Continued on page 20)



FIRST FACTORY—The first factory of Bemis Bro. Bag Co. was located on the second floor of this small building on the Mississippi River levee in St. Louis.

Bemis Bro. Bag Co. 100 Years Old

ST. LOUIS—The 100th anniversary of the founding of Bemis Bro. Bag Co. will be observed throughout 1958 with activities designed to emphasize the company's basic anniversary theme—"Entering our second century of skill, vision, and progress." In outlining his company's centennial year program, F. G. Bemis, president, said, "We will honor what has gone before, but, in large measure, we will do so by rededicating our company to its second century."

The company was founded in 1858 in St. Louis by Judson Moss Bemis, grandfather of F. G. Bemis. Today, the enterprise started in the loft of a small building on the St. Louis levee has grown to a nationwide organization of textile, paper and plastic packaging plants, cotton and paper mills, and paper specialty plants that provide American commerce and industry with well over a billion bags and other forms of flexible packaging every year. Today, there are more than 8,500 Bemis employees working in 27 plants and mills and 30 sales offices throughout the nation.

The modern design for the Bemis centennial emblem—in the form of an open book to symbolize the company's story—was selected to help keynote the forward look which the company is taking in its anniversary year, it was reported.

"It is extremely difficult," Mr. Bemis said, "to put into a few words the ideas or things which have been responsible for a company's growth through the years, and which we hope will guide it to even greater achievements in the future.

"We feel that the words skill and vision and progress come very close to saying what we want to say. We are honoring the skill of many people for many years and in many ways that has been responsible for designing, making, selling, and distributing Bemis products. We are honoring the vision that for 100 years has been responsible for new products, new ideas, new and better ways of doing things."

Bemis Bro. Bag Co. Centennial Emblem

The company's anniversary activities are under the general direction of a centennial planning committee headed by A. H. Clarke, retired Bemis vice president.

The principal anniversary event at Bemis plants and offices throughout the country will be centennial open houses for Bemis employees and their families. At some Bemis locations, the basic family-type open house will be expanded to include customer preview affairs or community-wide celebrations, it was announced.

One of the major functions of the centennial planning committee has been to develop and distribute to all Bemis managers an 80-page planning guide which contains suggestions and materials—open house ideas, pattern news releases, speeches and letters, order blanks for centennial pennants, exhibits, emblem reproductions and other items, etc.—for carrying out observance plans.

Clemson Pesticide School Gets Reports On Fire Ant, Witchweed Control Work

CLEMSON, S.C.—Some 150 members of the pesticide industry gathered at Clemson College Feb. 25-26 to attend the 7th annual pesticide school and conference sponsored by the college entomology and botany departments.

The first day of the 2-day session featured talks by L. H. Senn of the South Carolina Crop Pest Commission, J. N. Young of Merck and Co., C. C. Fancher, regional supervisor, Plant Pest Control Division, U.S. Department of Agriculture, Gulfport, Miss., and Dr. Vernon M. Kirk, associate entomologist, Pee Dee Experiment Station, Florence, S.C.

Mr. Senn in reporting on the status of the imported fire ant indicated that this pest is establishing a foothold in South Carolina. It has been definitely found in Charleston, Orangeburg, Edgefield, Spartanburg, Berkley and Marion counties.

Inspection teams which have been checking these counties report that the heaviest concentration is in Charleston and Orangeburg counties. Mr. Senn said that he felt the state has an excellent chance to wipe out this pest if adequate funds are made available soon enough by state and federal authorities. According to his report the fire ant is a destructive pest which builds mounds sometimes as high as 12 to 14 inches above the ground. It damages not only crops but will attack and often kill new born animals and birds. Its sting is also very painful to humans.

Mr. Young included in his talk some slides showing some of the effects that gibberellic acid has on plant growth and seed germination. The slides included a series of photographs showing the results of gibberellic acid experiments conducted in various parts of the United States.

Mr. Fancher in his report on the proposed witchweed eradication program said that although funds for this program are short, surveys will continue in areas where this pest has been reported. He said that a cultural control program has been planned for approximately 1,200 acres this year. It will be conducted by planting two trap crops and these will be followed by winter cover crops.

Witchweed has been reported in 11 counties of North Carolina and six counties in South Carolina.

Mr. Fancher pointed out that an all-out fight is being waged by state agricultural experiment stations in cooperation with the USDA's Agricultural Research Service in an effort to stop this weed parasite before it spreads into other sections.

Dr. Kirk pointed out that 6 years of research at the Pee Dee Experiment Station has shown that the corn billbug can now be controlled with aldrin wettable powder. Billbugs attack and destroy young corn plants and have been causing serious damage in many states during recent years. Dr. Kirk said that aldrin wettable powder, when applied as a preplant treatment in recommended amounts, has controlled the billbug in experiments in the Florence, S.C. area.

A new pest, the soybean cyst nematode, came in for quite a bit of discussion during the session. J. W. Kelly, area supervisor, Plant Quarantine Section, USDA, said that this pest has been reported in North Carolina, Tennessee, Missouri and Arkansas. Mr. Kelly said that the nematode is spread when soil containing the cysts is moved.

Other featured topics during the 2-day session included the use of antibiotics in the control of plant diseases and animal pests, the use of systemic insecticides in the control of animal pests, and changes in 1958 pesticide recommendations. Reports were made also on new pesticides and insecticides.

Dr. J. H. Cochran, head, department of entomology and zoology, and W. M. Epps, head, department of botany and bacteriology, were in charge of the school.

Firm Building New Plant in Washington

WHEELER, WASH. — Central Chemical Co. has started construction of a $25,000 feed and fertilizer plant here. The firm has been operating at Moses Lake, Wash., under the name of Central Fertilizer, Inc.

Best Adds Two

OAKLAND, CAL.—Addition of two new members to the management staff of Best Fertilizers Co. was announced recently by Lowell W. Berry, president of the company. George Couper has been retained as corporation counsel, and R. L. Hobbs has been named chief engineer.

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FERTILIZER RECOMMENDATIONS — Agronomists from thirteen middle western states suggested minimum grades and ratios of fertilizers for their respective areas in a recent meeting in Chicago. (Croplife, Feb. 17 and Feb. 24.) The following changes in grades and ratios have been suggested by the agronomists for future consideration: 1-3-6 (3-9-18) to 1-2-4 (5-10-20); 0-1-3 (0-10-30) to 0-1-4 (0-10-40); 1-3-9 (3-9-27) to 1-2-8 (4-8-32); and 1-2-3 (5-10-15) to 1-2-4 (5-10-20). South Dakota has suggested a ratio of 2:1:0 with a minimum grade of 27-14-0. These suggested minimum grade needs of the Middle Western states are effective for the year beginning July 1, 1958, the agronomists said.

AIRCRAFT

(Continued from page 7)

legislation curtailing agricultural applicators, several of the major U.S. aircraft corporations are making plans to enter the agricultural aircraft field. Cessna's G. A. "Jerry" Stegink recently flew to the Pacific Northwest to view the situation of aerial application firsthand. Mr. Stegink is L-19 project engineer, and he stated in an interview, "Our company is interested in the aerial application field. We have the L-19, a military aircraft that could, with few conversions, be turned into an aerial applicator-type aircraft. We want to look into the situation first, however, before we make any definite plans."

Piper, one of the leaders in light plane aviation, has transformed its J-3 Cub into an agricultural aircraft, and the Grumman Aircraft Corp. sent Randy Moore to the Pacific coast for a similar survey. Grumman, however, has a prototype aircraft now in tests in the midwest.

LeRoy Lampson, an owner of a converted L-19, says, "We have been flying the converted L-19 since 1953 and find it to be an excellent airplane. This particular craft was built by the Cessna Co. and is officially designated as the 305A. We bought it less the hopper and made our own hopper installation after we got the plane to the west coast. We made the necessary modifications in our shop and it is a combination sprayer, duster and seeder. We have found that it is economical to operate and will carry approximately the same load as a Stearman."

Mr. Lampson's observations were made after five years of flying the ship on his own acreage in Northern California.

Wesley Yates, agricultural engineer, summed up the present agricultural aviation picture. "We need," he said, "an agricultural aircraft that fits the needs of the farmer. There's room for little, big and biggest aircraft because each has its own job to do. But more than the aircraft, we need qualified people to fly them. The farmer and the aerial applicator are both competent, if they know their job well enough. But half well isn't good enough today."

College-Industry Fertilizer Council Organized in Iowa

AMES, IOWA—Formation of a college-industry fertilizer advisory council has been announced by Dr. W. H. Pierre, head of the agronomy department at Iowa State College. The organization will be known as the "Iowa Fertilizer Council," and comprises representatives of various segments of the fertilizer industry, the Iowa department of agriculture and Iowa State College.

"The council will provide for discussion of problems of common interest to the college and the fertilizer industry," Dr. Pierre said. He stressed that the council will function in a strictly advisory capacity. Objectives will include encouragement of fertilizer research, the announcement added. The group also will aid in publicizing research findings, and promoting education programs in soil fertility and soil testing.

Another goal of the council will be to work with the Iowa department of agriculture and the college for better understanding of Iowa fertilizer laws —and consideration of fertilizer legislation that would be in the best interests of Iowa farmers.

Council members held their first formal meeting at the college on March 4. They reviewed research and educational programs of the agronomy department.

Chairman of the council is John Porter, Iowa Plant Food Co., Des Moines, and secretary is John Pesek, Iowa State College agronomy department.

Other members of the council are A. R. Miles, Iowa department of agriculture; Jerry Mitchell, National Fertilizer Co., and Coy Babb, Spencer Chemical Co., Des Moines; John Strauss, Ris-Van, Inc., Belmond; George Kramer, Farmers Cooperative Elevator, Waukee; George Linton, American Agricultural Chemical Co., Humboldt; W. H. Pierre, E. R. Duncan and J. A. Stritzel, agronomy department, Iowa State College, Ames.

Also on the council are Zenas H. Beers, National Plant Food Institute, Chicago, Ill.; G. A. Wickstrom, American Potash Institute, Columbia, Mo., and Bill Guithess, Bradley and Baker, St. Louis, Mo.

Fertilizer groups represented on the council include the Iowa liquid fertilizer industry, blending fertilizer industry, mixed fertilizer ammoniators (independent, national and cooperative groups), nitrogen fertilizer industry, phosphate fertilizer industry, potash fertilizer industry, and the National Plant Food Institute.

Each industry group has one representative on the council. They are elected for 2-year terms by their respective groups at the time of the annual Fertilizer Manufacturers Conference in Ames.

The representative of the National Plant Food Institute is appointed by officials of that organization. The Iowa department of agriculture representative is appointed by the Iowa Secretary of Agriculture.

Iowa State College representatives are appointed by the Dean of Agriculture.

The council chairman, an elected member of the group, is chosen for a term of one year by council members. The secretary, under council articles, is chosen from among Iowa State College council members.

Honored by Forestry Association Officers

WASHINGTON—Louis H. Wilson, secretary and director of information of the National Plant Food Institute, has been elected an honorary vice president of the American Forestry Association "in recognition of outstanding contributions he has made and will continue to make in the field of natural resources."

His election by the board of directors of the association was announced by Fred E. Hornaday, executive vice president. Mr. Wilson served on the association's conservation awards committee from 1955 through 1957 and was elected chairman of the committee for 1956 and 1957.

TEXAS MEETING

(Continued from page 17)

ing the sap from such crops as corn, small grain, grain sorghum and legumes . . . In general, these insects reproduce very rapidly and usually build up in damaging numbers within a few days. Consequently, economic control of these insects is dependent upon proper timing of the application of insecticides . . .

"Most species of aphids may be controlled effectively by the use of sprays containing one to two pints of parathion or methyl parathion (two pounds of active ingredient per gal.) per acre; or two-thirds to one pint of malathion (five pounds of active ingredient per gal.) per acre. It is a good practice to apply the insecticides when the temperature is above 50 degrees F.

"The winter grain mite is a fairly common pest on small grain used for winter grazing . . . Insecticide treatments as recommended for aphids will result in good control of these mites.

"Grain sorghums are attacked by bollworms and sorghum webworms and these pests frequently do considerable damage . . . DDT, toxaphene or a mixture of these have proven effective for control of these pests in grain sorghum heads. Due to the residue regulations, however, DDT should not be applied to grain sorghum after the heads have begun to form if the grain or forage is to be used for human or livestock food. Toxaphene, however, may be applied at dosages up to four pounds of active ingredient per acre provided the treated forage is not fed to dairy animals or animals being finished for slaughter. Best results are obtained if the insecticide is applied late in the morning after the heads have opened . . .

". . . DDT, toxaphene, parathion, heptachlor and toxaphene-DDT mixtures probably are the most commonly used insecticides for controlling armyworms and cutworms on forage crops . . . Heptachlor may be used at a rate up to one-half pound of active ingredient per acre if applied 10 days or more before harvesting or pasturing the treated crop. Parathion should be applied at the rate of one pint of 25% emulsifiable concentrate an acre. Treatment must be made at least 15 days before grazing or harvesting the crop."

Speaking on Vegetable Insect Control, Dr. D. R. King told the group, "Insect control has become an essential prerequisite to efficient production of any crop. The concentrated production of vegetables on comparatively small acreages makes it especially important that insect injury be recognized and the need for treatment determined as soon as possible after infestations develop. Delay may result in correspondingly increased damage. Unlike forage or cotton, in which a portion of the crop can be sacrificed to insects without economic reduction in quality or yield, every spinach or lettuce leaf that is injured brings a lower market price. An increase in yield of two or three percent in horticultural crops may pay for an entire season's insect control program."

Dr. King warned that "the indiscriminate use of poisons is just as detrimental as neglecting to use them." He recommended this rule for applicators and growers to follow: "Use insecticides according to the directions on the label—on the crops, in the amounts specified and at the times specified."

On basic research in insect control, Dr. J. R. Brazzel told the group, "Basic research may be defined as the search for new knowledge of why or how things occur and behave as they do. For example, some research problems of a basic nature would include: Why does DDT kill some insects and not others? What are the nutritional requirements of our cotton insects? Why are some pink bollworms short cycle and others long cycle? and many others.

"Obviously, it is difficult for a farmer to understand how the answer to these problems could result in additional profit for him. Most research of a basic nature is not readily justified on a strictly monetary basis, even though basic studies are necessary to the development of effective insect control practices.

"Applied research, on the other hand, is the application of basic knowledge in an attempt to solve practical problems. This would include such problems as determination of economical rates of application of an insecticide for insect control, screening for new, effective insecticides, timing of applications, and other facts of a practical nature to meet the needs of the farmer. It often is easy to justify this type research in terms of crop or monetary returns. However, since applied research is dependent upon basic research, there must be a proper balance between the two . . .

". . . The ability of insects to develop resistance to some organic insecticides has introduced another factor for consideration. Many authorities feel that the phenomenon of resistance threatens to wipe out our recent gain in chemical control of insects . . . Among the pests attacking cotton which have been proved or those currently suspected of being resistant to certain insecticides are the boll weevil, cabbage looper, salt marsh caterpillar, thrips, cotton aphid and two species of spider mites." This, Dr. Brazzel said, poses a tremendous challenge to the basic research man.

Dr. Freeman M. Fuller, Jr., extension entomologist, spoke on problems in insect control. He said, "According to infestation records and the number of phone calls and letters during 1957, the fleahopper was one of the most injurious pests of cotton . . . There were, also, many complaints of failures to obtain fleahopper control with the recommended materials. It is believed that many of these failures were due to population pressure . . . According to experimental results, fleahoppers were just as easy to control with the same insecticides and the same dosages as in past years. The results obtained with BHC in controlling both fleahoppers and thrips as well as several other early season cotton insects have been erratic for several years.

"Cabbage loopers continued to be a pest on cotton over widespread areas of Texas during the 1957 growing season.

"I would like to report the results of a leafworm control demonstration conducted in Calhoun County by C. L. Cook, county agent, in cooperation with commercial entomologists," he said. "Mr. Cook had complaints in his county relative to poor leafworm control with toxaphene. He selected a field of approximately 40 acres that was heavily infested with leafworms for his demonstrations. The initial infestation ranged from six to 22 leafworms per plant with an average of 11 worms. In addition to leafworms, there was an average of seven cabbage loopers and three small bollworms per 100 plants. All sizes of leafworms and loopers were found.

"Toxaphene (six lb. per gallon) was applied at the rate of two quarts per acre by ground equipment. The first check, made 30 hours after application, showed an average of 10 worms per 100 plants (two loopers—eight leafworms). The second check, made 54 hours after application, showed four leafworms per 100 plants, and 78 hours after application, no leafworms, loopers or bollworms were found.

"I think this is a rather convincing demonstration which shows that the insecticides recommended for leafworm control will still get the job done provided they are applied at the correct dosages, in the proper manner, and are given sufficient time to kill the insects involved. Malathion has proved rather successful for leafworm control and has been added to the cotton insect recommendations for 1958."

Moving from insect control to another area of interest to aerial applicators, Dr. Wayne C. Hall of the department of plant physiology and pathology, said, "After the experiences of the 1957 harvest season, some of you probably are wondering if we've made any progress in defoliation and desiccation . . . We, public agency personnel, the chemical industry and you as applicators, have already oversold the public as to what 'miracle chemicals' can do. A 'miracle' defoliant doesn't exist that will give perfect results under all conditions . . . The applicator by himself cannot solve or control all of the factors that give good results. He must have the cooperation of the grower, the chemical industry, the research worker and the weather . . . We can do something about educating the grower to produce his crop with defoliation in mind, demanding better and more consistent preharvest chemicals, and doing the best job of application. When we demand a superior compound we must be willing to pay for it."

Changing the subject to herbicides, Wayne G. McCully of the range and forestry department told the applicators "post and blackjack oaks are a problem on approximately 11 million acres in Texas, and more than 65 million acres in Texas, Oklahoma, Arkansas and Louisiana are covered by these woody plants. Only a small portion of this acreage can be treated with recommended aerial sprays of 2,4,5-T and similar materials because of the hazard to intermixed cotton, watermelon, peanut and other crops.

"Fenuron is one of several substituted urea herbicides, and is closely related to another urea herbicide, monuron. Tests conducted since 1954 have shown that a single broadcast application of 16 lb. fenuron pellets an acre will control post and blackjack oak. Winged elm is nearly as susceptible as oak; yaupon is affected but haw, greenbrier, French mulberry and some other less common woody plants are resistant."

Garlyn O. Hoffman, extension range specialist, told the group that "weeds in grassland pastures rob the Texas stockmen of millions of dollars each year. Controlling weeds has paid off for many livestock producers as indicated by a number of demonstrations conducted by county agents over the state."

QUARTER CENTURY AWARD—John D. Zigler (left), general manager of the plant food division of International Minerals & Chemical Corp., receives 25-year merit pin from Thomas M. Ware, company's administrative vice president, at a recent luncheon meeting honoring Mr. Zigler. Caps and hats in background were used in parody tracing Mr. Zigler's career from salesman to division manager. He joined the company in 1933.

SECRETARIAL INSPECTION—Ezra Taft Benson, Secretary of Agriculture, examines a just-off-the-press issue of "Farm Store Merchandising," new publication of the Miller Publishing Co. Looking on are Paul A. Anderson, left, advertising sales manager of the new magazine, and Emmet J. Hoffman, editor. Mr. Hoffman is also a member of the Croplife editorial staff, being responsible for the "Better Selling" section of the paper and author of the "Over the Counter" column each week. The picture was taken in Minneapolis March 3 when Mr. Benson appeared before the annual farm forum meeting of the Chamber of Commerce.

Cecil H. Meadors, Jr., and Earl D. Robison of the Spur substation, TAES, commented that "effective control of mesquite and sand shinnery oak on native grassland is largely dependent on selection of a low cost method, such as aerial application, that will show economic returns when used to control existing and subsequent reinfestation by these shrubs."

On hardwood control for pine release, Dr. Robert A. Darrow, range and forestry, said, "The use of aerial spraying for the selective control of hardwoods and pine-release in pine-hardwood stands has received considerable attention from forest landowners during the past few years. Foresters looking for an effective and economical method of timber stand improvements and forest management are taking a long look at this method and are creating strong demands on the research program in this field . . ."

"Esters of 2,4,5-T are probably the best general herbicide presently for the control of the various species in the southern states. Applications of 1½ to 2½ lb. to the acre of 2,4,5-T, in four gallons of spray mixture in two successive years have given effective control of susceptible species such as post and blackjack oaks, hickory and sweet gum, and moderate control of the more resistant hardwoods such as southern red oak and sandjack oak. Recent tests, single applications of 2,4,5-T ester at one to 1½ lb. per acre in eight to 10 gal. spray mixture an acre have given effective topkills and may be as effective as two successive yearly low-volume applications," it was pointed out.

"Tests of helicopter and fixed-wing plane application in 1957 gave comparable topkills of canopy. There were some indications of a more thorough spray coverage in dense stands and underbrush in application by helicopter."

Dr. D. R. Fitch of the college's division of business administration, on the subject of finance, credit and collections, said, "A dusting operator needs fixed capital to purchase, or make the down-payment on, the planes, trucks and specialized equipment needed to do the job, as well as working capital to feed the hungry human help, chemical hoppers, and gas tanks until payment is received for the services performed.

"The problems of financing a crop-dusting-spraying business, highly seasonal in nature and dependent upon the fortunes of the planter and farmer, can provide many headaches for the operator. The job of securing sufficient capital from shy sources and keeping this capital working efficiently in the business can build the character and reduce the sleep of any man."

Kentucky Fertilization Sales Increase in January

LEXINGTON, KY.—Fertilizer consumption in Kentucky for the first month of 1958 showed an increase over the same month of 1957, according to a report just issued by the department of feed and fertilizer, of the Kentucky Agricultural Experiment Station. The statistics were compiled from sales invoices supplied by fertilizer manufacturers.

For January, 1958, total sales of mixed fertilizers came to 51,550 tons as compared to 47,090 tons the previous January. The sales of straight materials were also on the increase in January, the report said. January, 1958, recorded movement of 7,206 tons as compared to 6,837 tons during the same month the year previous.

Of mixed fertilizers, the grade of 5-10-15 was most popular with 17,892 tons sold in January, 1958. That month last year recorded only 15,477 tons of the same grade. A 10-10-10 grade was in second place with 3,690 tons, up 1,209 tons from the 2,481 figure of the same month of last year. The popularity of 6-8-6 showed a decline, it having sold to the extent of 2,931 tons in January, 1958 as compared to 3,591 tons in the same month last year.

Among the single materials, ammonium nitrate showed an increase of nearly a thousand tons, rising to 3,864 tons from 2,884 tons the year before. Superphosphate, on the other hand, registered a drop from 1,298 tons to 1,238.

New California Firm

CHICO, CAL.—Formation of a new company to serve Chico and surrounding communities was announced recently by the firm of Peters and Peters of this city. The company will be known as the Farmers Agricultural Chemical Co., and will offer complete lines of commercial agricultural fertilizers. Directors of the firm are Jack L. Rawlins, O. A. Kilpatric and Jerome D. Peters, Jr., all of Chico.

New Aerial Firm

SHAFTER, CAL.—A new aerial service for farmers of Kern County, California, was formed recently, by Alfred G. Mortimore, 422 James St., Shafter. Under the name of Shafter Farm Service, the new company will service all ranches and farms in the area with a complete crop dusting service supplying fertilizers as well as insecticides.

OREGON SOIL DISTRICT

TILLAMOOK, ORE.—Oregon's first soil conservation district, the South Tillamook unit, is now 18 years old and still going strong, according to an annual report recently released by John Craven, Jr., secretary-treasurer. Original district was composed of some 18,500 acres. There are now 222,420 acres covered by a district program which includes all phases of soil and water conservation known to be needed in the immediate area.

Robert G. Hickle Richard L. Rahn

COLLIER PROMOTIONS—Appointment of Robert G. Hickle as manager, southern area, agricultural chemical sales, and Richard L. Rahn as coordinator of agricultural chemical sales has been announced by the Collier Carbon and Chemical Corp., manufacturers of Brea Brand fertilizer products. Both appointments are effective immediately, according to R. H. McGough, manager, agricultural chemical sales.

Croplife®

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Northeastern states.

IN PLANT FOOD INDUSTRY . . .

Management Sets Stage for Safety Program

Safety is a subject that tends to lose momentum unless leaders in the industry involved take frequent steps to keep the idea alive and moving ahead. This is true in every type of industry and certainly in fertilizer plants around the country.

Upon whose shoulders must responsibility for a safe industry be placed?

This question was answered categorically in a recent talk by Paul T. Truitt, executive vice president of the National Plant Food Institute. "Management," he declared, "carries the chief responsibility to safety." In fact, his talk published in Croplife last week, pointed out some potent facts concerning the importance of continually improving the record, and emphasized the leadership role to be followed by management. "The selling and support for the program must come from the top," he declared. "The management team must be inclusive from top to bottom: owners, managers, and employees alike."

However, selling safety is not always an easy job, as is known by many who have tried it. But the end results are worth the effort. Prevention of not only serious accidents in plants, but also of smaller mishaps, effects a saving in both time and money, not to mention the physical pain involved.

What happens when a firm initiates a safety program, joins the fertilizer section of the National Safety Council, and takes advantage of its suggestions, posters, and educational helps? The safety records of companies that have taken this step tell the story graphically. As Mr. Truitt says, "The record since 1950, with only a fairly small proportion of all fertilizer companies cooperating, is encouraging, even impressive."

Companies participating in the National Safety Council program reduced accident frequency from 15.0 in 1950 to 10.8 in 1956, or 30%. The limiting factor in the overall picture, though, lies in the lack of participation by smaller plants where both the frequency and severity rates are higher than for the larger operators.

This truth was underlined last year when some 175 plants entered the National Safety Council's fertilizer section safety contest. This special attention to safety caused a drop of 43% in accident frequency, which is clear proof that participation pays. The 175 firms taking part in the program showed a much better performance record than did the over 600 companies which stayed out. These consistently higher frequency rates result in higher insurance premiums for the entire industry, and also lend credence to the accident-prone reputation sometimes attributed to the fertilizer industry as a whole.

How can the situation be improved? Mr. Truitt gives a good answer. "The recommendation I would make today to each fertilizer manufacturer who is not already a member, is to join the National Safety Council and cooperate in the work of its fertilizer section, and do it now," he said.

In the final analysis, under our private enterprise system, the initiative and responsibility of making industry safer rest with management. "The government can and does assist, but it must not usurp," the NPFI official reminded. "It is absolutely essential that we stop evading, excusing ourselves, putting off, and blaming each other for a sorry situation. Collectively and individually, let's pick up the challenge and get on with the job."

Fertilizer companies not presently members of the fertilizer section are invited to contact John C. Kato, National Safety Council staff representative at NSC headquarters, 425 N. Michigan Ave., Chicago, for full information.

Accenting the Bright Side

The spectre of recession is haunting many people these days. How far will it go? How deeply might it cut before the curve points upwards again? Is there anything that industry itself can do toward hastening the end of the downward trend?

It is easy to ask questions, but sometimes difficult to come up with an answer that will work. However, Frederick H. Mueller, Assistant Secretary of Commerce, offered some suggestions at a recent Washington luncheon which might be helpful in regaining perspective on the current situation.

While it is true that business has fallen off somewhat from the levels of 1955, 1956 and 1957, he said, it should also be kept in mind that these latter years were periods of record-breaking economic performances, and that there is a tremendous difference between receding from all-time peak records and sinking below "normal" or "average" periods of economic activity.

This recession, he said, is the "best advertised recession in history." He pictured the American economy as standing in the midst of a most unusual situation in which the economic levels prevailing today would have been hailed as "the greatest prosperity the country had ever experienced," in almost any other period of American history.

These facts should be kept in mind by business people, and also extended to the public. Confidence in America's future must be maintained, for it is only through this medium that commodities are purchased.

Farmers, the users of fertilizers and pesticides, as well as scores of other important commodities, are pretty sensitive folks when it comes to economic matters. If they can be made to feel reasonably sure of the future, then it is that they take on obligations for future development.

"Nothing is so convincing to the people generally as someone who believes in the future enough to put up his own money to back that belief," Mr. Mueller observed. This would certainly include efforts toward maintaining sales through the media of advertising and by word of mouth. "I believe there is a big job of selling to be done, particularly by businessmen and government officials," he said.

Sees Need for Bold Action

"A new long-time objective for applied agricultural research is urgently needed to solve the knotty problems facing agriculture in the years ahead," according to Arthur D. Weber, dean of agriculture at Kansas State College, Manhattan.

In a recent talk at the college, he added that the most important consideration "is for agricultural scientists to face the fact that there have been far-reaching changes in American agriculture; changes of such magnitude that to deal with them will require vision and imagination and a willingness to break with tradition, if need be, to find the answers."

Mr. Weber added that a critical appraisal of changing needs "should be entered into boldly and with willingness to break with the past, if necessary, to achieve a solid, unified program; one which will serve the best interests of both agriculture and business."

Croplife's Home Office

Croplife

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MEETING MEMOS

June 12-14 — Manufacturing Chemists' Assn., 86th Annual Meeting, The Greenbrier, White Sulphur Springs, W.Va.

Oct. 14-15—Western Agricultural Chemicals Assn., Annual Meeting, Villa Hotel, San Mateo, Cal., C. O. Barnard, 2466 Kenwood Ave., San Jose 28, Cal., Executive Secretary.

EDITOR'S NOTE: The listings above are appearing in the Meeting Memos for the first time this week.

March 20—Pest Control Field Day, Dade County Technical Agricultural School, Miami.

March 20-21—Pest Control Operators Conference, Michigan State University, East Lansing, Mich.

March 25-28—Minnesota Seed & Fertilizer Dealer Meetings, Sponsored by the University of Minnesota; Gullickson's Cafe, Tracy, March 25; Porter Hotel, St. Peter, March 26; Hotel Albert, Albert Lea, March 27; Legion Hall, Winona, March 28.

March 26-28—North Central Branch Entomological Society of America, Annual Conference, Sheraton-Jefferson Hotel, St. Louis.

April 13-15—Sixth Annual California Fertilizer Conference, California State Polytechnic College, San Luis Obispo, Sidney H. Bierly, 475 Huntington Drive, San Marino 9, Cal., General Manager.

April 17-19—California Hay, Grain & Feed Dealers Assn. Annual Convention, Ambassador Hotel, Los Angeles.

April 22 — Western Agricultural Chemicals Assn., Spring Meeting, Hotel Biltmore, Los Angeles; C. O. Barnard, 2466 Kenwood Ave., San Jose 28, Cal., executive secretary.

April 30 — Manufacturing Chemists' Assn. Precautionary Labeling Conference, Shamrock Hotel, Houston, Texas.

May 22-23—Soil Science Society of North Carolina, First Annual Meeting, Williams Hall, North Carolina State College, Raleigh, N.C.

June 9-11—Association of Southern Feed & Fertilizer Control Officials, Heart of Atlanta Motel, Atlanta, Ga., Bruce Poundstone, University of Kentucky, Lexington, Ky., Secretary-Treasurer.

June 15-18—National Plant Food Institute, Annual Meeting, Greenbrier Hotel, White Sulphur Springs, W. Va.

June 25-27—Pacific Branch, Entomological Society of America, San Diego, Cal.

July 8-10—Pacific Northwest Plant Food Assn., Ninth Annual Regional Fertilizer Conference, Pocatello, Idaho.

July 18-19—Southwest Fertilizer Conference and Grade Hearing, Buccaneer Hotel, Galveston, Texas.

Oct. 20—Annual Sales Clinic of Salesmen's Assn. of the American Chemical Industry, Inc., Roosevelt Hotel, New York.

Oct. 20-21—Fertilizer Section, National Safety Council, annual fall meeting, La Salle Hotel, Chicago, Ill.

Oct. 22-24—Pacific Northwest Plant Food Assn., Annual Meeting, Gearhart, Ore., Leon S. Jackson, P.O. Box 4623, Sellwood-Moreland Station, Portland, Ore., secretary.

Oct. 28-29—Northwest Garden Supply Trade Show, Masonic Temple, Portland, Ore.

Oct. 29-31—National Agricultural Chemicals Assn., 25th annual meeting, Bon Air Hotel, Augusta, Ga.

Nov. 9-11—California Fertilizer Assn., 35th Annual Convention, Ambassador Hotel, Los Angeles, Sidney H. Bierly, 475 Huntington Drive, San Marino 9, Cal., General Manager.

Dec. 3-5—Agricultural Ammonia Institute, Annual Meeting, Morrison Hotel, Chicago, Jack F. Criswell, Claridge Hotel, Memphis, Executive Vice President.

Jan. 20-22, 1959—California Weed Conference, Santa Barbara, Cal.

Roberts Chemicals Registers Herbicide

NITRO, W.VA. — Roberts Chemicals, Inc. here has announced that Herbisan 5, the firm's trade mark for a formulation of bis ethyl xanthogen, has been registered by the U.S. Department of Agriculture for preemergent weed control in onions.

Work done by Dr. Ruble Langston at Purdue University, using radioactive tracer techniques, showed no residue in onions when the product was used following the directions, according to the company. It also said that work done on other crops left no residue. Roberts Chemicals said that Herbisan 5 has been effective for control of weeds in onions (both pre and post emergent), potatoes, peppers, spinach, beans and other crops.

Rolling Classroom

BENNETT, COL.—A rolling classroom has been bringing advice on fertilizers to this community and five other Colorado towns in recent weeks. The special "agricultural improvement" rail car, a joint project of the Union Pacific Railroad and the Rocky Mountain Plant Food Assn., stopped at Eaton, Greeley, Sterling and Weldona in February and at Brighton and Bennett this month. At each town forums were held under the direction of F. D. Wentz, Union Pacific agricultural agent, and A. F. Hoffman of the Anaconda Co. fertilizer department.

Missouri Shipments Show Gain in 1957

COLUMBIA, MO.—Missouri fertilizer shipments in 1957 totaled 801,210 tons, compared with 785,949 tons in 1956, the University of Missouri Agricultural Experiment Station has reported.

The 1957 total included 413,044 tons of mixed goods, 179,387 tons of materials and 208,779 tons of rock phosphate. Comparable figures for 1956 were 454,525 tons of mixed goods, 126,344 tons of materials and 205,080 tons of rock phosphate.

The tonnage of materials in 1957 was a new high for Missouri. Included in that figure were 53,589 tons of N, 9,331 tons of P_2O_5 and 14,560 tons of K_2O.

The average composition of mixed goods sold in 1957 was 9.02-14.06-11.83, compared with an average for 1956 of 8.33-14.10-11.85.

Cotton Seed Shortage Looms in Southwest

TAHOKA, TEXAS—Cotton farmers in West Texas and parts of New Mexico are facing the most critical seed shortage in history. Throughout the area, which produces a sizeable part of the nation's cotton, the certified seed growers and agronomists are urging farmers to get their seed tested for germination percentage.

Ordinarily the germination runs from 70 to 90%, but an early freeze last autumn severely damaged the seed. At the state testing laboratory in Lubbock, many samples are averaging less than 20%, with only a few being as high as 60%.

Authorities warn that if farmers must do any replanting, the seed supply will become exhausted. One seed company which ordinarily supplies all its customers with certified cotton seed of the long staple, blight-resistant variety has been able to get only enough for one planting. Several certified seed growers have sold seed in small parcels to old customers, and reduced all orders by over 50%.

One other threat to this year's cotton crop is nematodes. They were first reported on the Texas plains in 1953 and have become more serious the last two years. The Lubbock Experiment Station reports that chemicals can lessen the danger. Last year on the station the chemically treated land made 92 lb. more lint per acre.

The chemicals are not being openly recommended yet, however, because the cost amounts to $10 to $12 an acre. Farmers should first make sure they have nematodes, says Charles Fisher, station superintendent, because of the high cost of treatment.

Several seed firms are recommending that farmers treat the seed when it is planted. Since seedling diseases are taking a heavier toll of cotton each year, the proper treatment may prevent the need of replanting.

BUYS STORE

KEIZER, ORE. — Wilson Leith, formerly with the U.S. Department of Agriculture in Portland, Ore., has purchased the Keizer Farm & Garden Supply Store here.

CALENDAR FOR 1958-59

MARCH

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30	31					

APRIL

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20	21	22	23	24	25	26
27	28	29	30			

MAY

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				1	2	3
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11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

JUNE

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29	30					

JULY

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AUGUST

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31						

SEPTEMBER

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28	29	30				

OCTOBER

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NOVEMBER

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DECEMBER

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28	29	30	31			

JANUARY

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18	19	20	21	22	23	24
25	26	27	28	29	30	31

FEBRUARY

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

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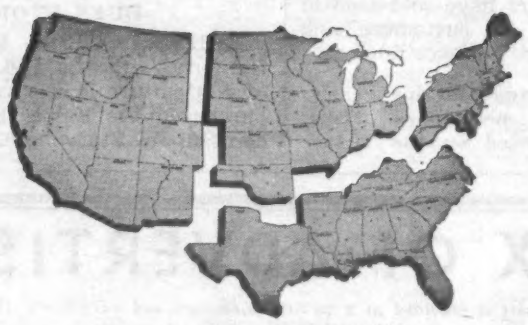
reporting is studied
every 7 days by the agricultural
chemical industry . . .

CROPLIFE's spot diagnosis of
the shifting agricultural chemical scene
represents a powerful influence on
this 2 billion dollar market . . .



In addition to its national coverage, Croplife offers a selective regional circulation plan in these marketing-areas

NATIONAL COVERAGE WEEKLY . . .

Croplife's carefully controlled circulation provides national coverage weekly of manufacturers, formulators, mixers and ingredient suppliers.

PLUS REGIONAL COVERAGE BY MARKETING-AREAS . . .

In addition, a unique regional circulation plan provides advertisers with a selective marketing-area coverage of wholesale and retail dealers and farm advisory personnel.

WRITE—WIRE—PHONE our nearest office for a complete analysis of Croplife's important role in your advertising program.

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